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Very Wide Binaries and Other Comoving Stellar Companions: A Bayesian Analysis of the Hipparcos Catalogue

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ABSTRACT

We develop Bayesian statistical methods for discovering and assigning probabilities to non-random (e.g., physical) stellar companions. These companions are either presently bound or were previously bound. The probabilities depend on similarities in corrected proper motion parallel and perpendicular to the brighter component's motion, parallax, and the local phase-space density of field stars. Control experiments are conducted to understand the behavior of false positives. The technique is applied to the Hipparcos Catalogue within 100 pc. This is the first all-sky survey to locate escaped companions still drifting along with each other. In the < 100 pc distance range, $\sim$220 high probability companions with separations between $0.01 - 1$ pc are found. The first evidence for a population ($\sim$300) of companions separated by $1 - 8$ pc is found. We find these previously unnoticed naked-eye companions (both with $V < 6^{th}$ mag): Capella & 50 Per, δ Vel & HIP 43797, Alioth (ϵ UMa), Megrez (δ UMa) & Alcor, γ & τ Cen, ϕ Eri & η Hor, 62 & 63 Cnc, γ & τ Per, ζ & δ Hya, β^{01}, β^{02} & β^{03} Tuc, N Vel & HIP 47479, HIP 98174 & HIP 97646, 44 & 58 Oph, s Eri & HIP 14913, and π & ρ Cep. High probability fainter companions ($> 6^{th}$ mag) of primaries with $V < 4$ are found for: Fomalhaut (α PsA), γ UMa, α Lib, Alvahet (ι Cephi), δ Ara, β Ser, ι Peg, β Pic, κ Phe and γ Tuc.

Subject headings: (stars:) binaries: visual; astrometry, methods: statistical; catalogs

1. Introduction

The observed binarity and multiplicity rates of stars are significant clues to star formation processes and galactic dynamics. For example, the mass-ratio distribution among pre-main-sequence binaries[1] indicates that fragmentation rather than common accretion is the dominant formation process (Goodwin et al. 2007). Very wide binaries present a special opportunity because their separations are larger than the size of typical prestellar cores and thus are important

[1] In this paper we loosely use the term "binary" to indicate any system that contains more than one star, unless otherwise stated.

for understanding the arrangement of separate stellar disks in low-densities star-formation sites (Parker et al. 2009).

After formation, the evolution of binaries is determined by dynamical processes. In high to moderate density environments, most pairs with separations of a few hundred to a few thousand AU are broken up within a few million years (Parker et al. 2009). Outside of these high density regions, Galactic tides and weak interactions with passing stars peel off stars with separations of a few times 10,000 AU on a time scale of about 10 Gyr ((Heggie 1975; Weinberg et al. 1987)).

Until quite recently, stars were commonly assumed to quickly leave the scene once they become unbound. However, recent simulations find that escaping stars drift apart with relative velocity $\lesssim$ 1 $\mathrm{km\,s^{-1}}$ and remain within a few 100 pc of the primary for billions of years (Jiang & Tremaine 2010). In these simulations the large scale potential is dominated by Galactic tides, while local perturbations to the large-scale potential are dominated by stars. Their model does not include molecular clouds, spiral arms, or dark-matter subhalos. The simulations indicate that the binarity rate decreases with separation out until several tidal radii, at which point the rate actually increases and peaks at 100 − 200 pc. In addition, since the Galactic gravity field dominates the trajectories of escaped stars, they travel along with their ex-primaries, trailing or leading at roughly constant Galactic radii (like a tidal stream, but of only two or three stars).

On the other hand, if, locally, there are many dark matter subhalos, companions would be more quickly torn away and evidence of previous binaries would be lost. Thus, observational determination of the frequency and ages of escaped companions in similar orbits should tell us much about the small scale structure of the Galactic gravity field, the Oort A- and B-constants, and place stringent constraints on dark matter subhalos.

Existing double star catalogs, such as the WDS (Mason et al. 2001), are mostly populated with systems selected using fairly simple criteria such as proximity in the plane of the sky or common proper motions (CPM) of high proper motion stars. Very often, pairs await confirmation of orbital motions before being accepted as a physical pair which, obviously, selects against wide binaries. In a work based on double stars extracted from a large number of catalogs, one of us found that the *apparent* binarity rate changes dramatically both with distance from the Sun, and with apparent magnitude (Olling 2005a). In that work many catalogs[2] were combined, and about 90% of HIP stars within 10 pc were found to be either part of a multiple system and/or an exoplanet host. In contrast, only ∼14% of HIP stars are listed as multiple. Furthermore, only ∼2% of HIP stars have other HIP stars as possible companions. Indeed, it appears that the completeness of catalogs of field binaries are very seriously affected by selection effects [Hogeveen (1990); Olling (2005a); Kouwenhoven (2006); Eggleton & Tokovinin (2008); Kouwenhoven et al. (2009)]. This

[2] The catalogs used were: the Hipparcos Catalogue (HIP); Tycho-2 Catalogue (TY2) (Høg et al. 2000); Tycho Double Star Catalogue (Fabricius et al. 2002); Geneva-Copenhagen Solar Neighborhood Radial Velocity Survey (Nordström et al. 2004); 9^{th} Catalog of Spectroscopic Binaries (Pourbaix et al. 2004); 4^{th} Catalog of Interferometric Measurements of Binary Stars (Hartkopf et al. 2004); Washington Double Star Catalog (Mason et al. 2001); and Extra-Solar Planets (The Extrasolar Planets Encyclopedia 2006). In addition, the updated parallax information from the new Reduction of the Hipparcos Catalogue [HIP2, van Leeuwen (2007)] is used rather than the values listed in HIP.

is especially true for wide binaries for which confusion due to field stars is severe.

1.1. Why Very Wide Binaries?

Parker et al. (2009) indicate that "hard binaries" with semi-major axis (a) $\lesssim 50$ AU are almost never affected by dynamical processes in either the field or inside clusters, while "intermediate binaries" ($50 \lesssim a \lesssim 1,000$ AU) can be highly affected by dynamical processes, especially if they are formed in dense star clusters. Unevolved "wide binaries" with $a > 1,000$ AU can only have formed in low density starforming regions with densities less than a few stars per pc^3, the so-called "isolated star formation" mode (Goodwin 2010). However, of order 15% of G-type dwarfs are found in wide binary systems, with $a \geq 10^4$ AU, which even exceeds the size of isolated star formation regions. It is thought that systems of this size can only form during the dissolution phase of low density clusters (Kouwenhoven et al. 2010).

From a Galactic dynamics perspective, one can expect binary stars with separation up to about the tidal or Jacobi radius, (r_J), while their relative velocities should be about the Jacobi velocity (v_J):

$$r_J = \left(\frac{G\,(M_1+M_2)}{4\,\Omega\,A}\right)^{1/3} \sim 1.7\,\mathrm{pc}\ , \tag{1}$$

$$v_J \approx 0.05\left(\frac{M_1+M_2}{2}\right)^{1/3} \mathrm{km\,s^{-1}}\ , \tag{2}$$

(Jiang & Tremaine 2010), where G, is the gravitational constant, Ω the angular velocity of the Galaxy at the Solar circle, A is Oort's A constant, and M_1 and M_2 are the masses of the components. The value of 1.7 pc is valid for the canonical values for the Galactic constants and individual masses of 1 $M_\odot$. Note that the tidal radius depends weakly, only as the cube root, of total mass. Thus, if it is the case that systems that become unbound remain "close companions" for a very long time, then the region where bound or almost bound systems can be found would extend much farther than has been previously suggested [0.1 – 0.2 pc; e.g., Heggie (1975); Bahcall & Soneira (1981); Retterer & King (1982); Weinberg et al. (1987); Quinn et al. (2009)]. This all suggests that separations from 10,000 AU to several parsecs is in need of much further study.

1.2. Some Previous Searches for Very Wide Binaries

The search for companions of high proper motion pairs in astrometric catalogs is ongoing; e.g., Levine (2005) use the USNO-B1 catalog (Monet et al. 2003), Gould & Kollmeier (2004) use the USNO-B1 and 2MASS (Skrutski et al. 2006), Makarov et al. (2008) use the NOMAD[3] catalog, while Lépine & Shara (2005) and Raghavan (2009) use their own surveys. However, the best

[3] The NOMAD catalog is a compiled catalog containing positions, proper motions, some optical colors, *and* NIR colors from 2MASS, if available. The astrometric data listed comes from the HIP, TY2, UCAC2 and USNO-B catalogs.

astrometric catalogs, HIP, TY2, UCAC2, and now UCAC3 (Zacharias et al. 2010), have somewhat escaped the attention of searches for CPM pairs. We note that Caballero (2009, 2010) has embarked on a program to identify very wide binary systems. His earlier work concentrates on *common* proper motion systems with separations over $16\rlap{.}'65$ in the WDS, while the latter work focuses on the α Lib + KU Lib system with a separation of $2\rlap{.}^{\circ}6$ (1.05 pc). In these works, the focus has been on *common* proper motions. However, to search for the widest bound systems and for recently escaped companions, one must look at separations > 1 pc, which corresponds to several degrees of separations for stars within 100 pc. But, projection effects cause companions with similar space velocities to have dissimilar proper motion and radial velocities, hence at very wide separations, *common* proper motion studies will miss true companions and may even lead to misidentifications. In §§3.2, we describe how to take these geometric effects into account.

Finding companions of nearby stars by rigorous statistical analyses is a fast way to discover additional nearby stars. It may also be a means of discovering more nearby brown dwarfs and white dwarfs, provided many faint candidate stars are included, as in the larger Tycho-2 (TY2) or UCAC3 catalogs. Finally, the discovery of a substantial number of late-type stars that are paired to higher mass stars can help significantly in establishing the metallicity and temperature scales for these low-mass systems (presumably, both components have the same [Fe/H]).

Therefore, it would be fruitful to attempt to construct a statistically robust catalog of astrometric companions (both bound systems and escaped binary components) with well defined selection criteria by datamining modern astrometric catalogs. The astrometric catalogs such as HIP, TY2, UCAC3 and NOMAD provide order of magnitude better proper motions than previous catalogs [but see the cautionary notes by Makarov et al. (2008) on possible systematic errors for faint NOMAD sources]. In this paper, a methodology based on Bayesian statistics is discussed and applied to the stars in just the HIP that are within 100 pc. In a future work, we will present results of applying these techniques to stars in the TY2 that may be companions to stars in HIP.

Throughout this paper, we use "d" for distance (in pc), "r" for 3-d radial separation, "π" for parallax, "μ" for proper motion, "θ" for angular separation, and "a" for semi-major axis, unless otherwise stated. The sub- and superscripts "p," "c," and "f" are used to refer to properties of primaries, companion candidates and stars in "the field," respectively.

2. Multiplicity: Recent Developments

In their study, Duquennoy & Mayor (1991) (hereafter DM91) use their radial velocity data in combination with existing astrometric binaries to determine the distribution of periods of main-sequence G stars within 22 pc. They find that the parent distribution function (PDF) of periods is approximately Gaussian in the logarithm of the period,

$$\mathrm{PDF}(\mathcal{P}) \;\propto\; e^{-\frac{1}{2}\left(\frac{\log_{10}\mathcal{P}-4.8}{2.3}\right)^2}\;, \tag{3}$$

where $\mathcal{P}$ is the period in days. The peak is at $\mathcal{P} = 173$ years (~ 35 AU), while the 1-σ boundaries are 316 *days* (~ 1 AU) and 34,000 *years* ($\sim 1,212$ AU). From their data, DM91 estimate a binary fraction of ∼67%. DM91 also find that their observations are consistent with the assumption that secondaries are drawn randomly from the initial mass function (IMF) below the primary; therefore, companions are usually considerably fainter than the primary. There is debate in the literature over the exact shape of the PDF: DM91's Gaussian shape was first proposed by Kuiper (1942) versus Öpik classical power-law distribution (Öpik 1924). Because the integral of the Öpik-power-law distribution diverges it *must* break down. This is indeed observed at small and large separation (e.g., Goldberg et al. (2003); Chanamé & Gould (2004); Lépine & Bongiorno (2007), and references therein).

Raghavan (2009), in his dissertation, presents an impressive body of work on a sample of stars that significantly extends the DM91 sample. He scrutinized 454 Sun-like stars within 25 pc by pulling together up-to-date radial velocity surveys and the best Hipparcos astrometry, while he also performed a large survey with the CHARA interferometer for close-in binaries. Following in the footsteps of recent wide-binary searches, he "blinked" between early- and late-epoch sky-survey images, out to radii of about $10'$, or 10 kAU. He concludes that $(55 \pm 3)\%$ of stellar systems are single stars. For the 25pc sample, we search for companions with separations up to 120 times larger than those blinked by Raghavan (2009).

3. Methodology

Although astronomers have been searching for and finding physically associated pairs of stars since the time of Galileo, there have not been thorough studies to explicitly assign probabilities of association. In this pilot project, we search for common proper-motion stellar multiples out to very large separations, as far as is practical, and set probabilities for these to be more than merely coincidental. We do *not* limit ourselves necessarily to high proper-motion pairs as has been done in the past (Gould & Chanamé 2004; Lépine & Bongiorno 2007): although stars with field stellar density exceeding some threshold in a 5 dimensional box given by distance, plane of the sky positions and proper motions are dropped. A region about the provisional primary star that is the same extent in sky coordinates as the field selection region but much smaller in proper motion is used to provide high quality candidate companions. Where the field density is small, any star appearing in this small region has high probability of being physically associated. As the field density increases, false positive detections grow and eventually swamp true companions. In the range between these, it should be possible, using control experiments, to at least provide upper limits to the number of real companions along with a set of candidates each with moderately low probabilities. These candidates can be followed up with radial velocity measurements to further assess their true nature.

The results of the Hipparcos space-based mission provide high precision proper motions and parallaxes using only its 3.5 year baseline. For many cases, though, the best proper motions are obtained from catalogs that combine data from several astrometric catalogs, spread over up to 100 years. In our current study, we use the proper motions from TY2 when available, and from HIP2

otherwise. Although the HIP2 errors are often smaller than the TY2 errors, it is important to use proper motions over a longer baseline than that of HIP2 to ensure that the barycentric motion is used. A tight secondary at a few AU could induce proper motions of the primary at several times the HIP2 error. In the DM91 distribution, since about one-half of all binaries have periods < 173 yr ($a \lesssim 35$ AU) then, within 50 pc, the orbital motions are several to tens of mas yr^{-1}, significantly larger than the proper motion errors. Thus, the longer time baseline of TY2 makes its proper motions less susceptible than HIP2 to orbital motions induced by small separation companions. One magnitude below their respective completeness limit, HIP2 has errors in proper motion of $\epsilon_\mu \sim 0.8$ mas yr^{-1} at V$\sim$8.5, while TY2 has $\epsilon_\mu \sim 3.5$ mas yr^{-1} at V=11.5.

As each cataloged star is considered as a primary, all stars within a radius of θ_{outer} and more than θ_{inner} (Table 1), within a distance range $\mid d - d_p \mid < \Delta d_{max}$, and with $\Delta\mu = \mid \vec{\boldsymbol{\mu}}_c - \vec{\boldsymbol{\mu}}_p \mid < \Delta\mu_{outer}$ are selected. Of those stars, the number outside of $\Delta\mu_{inner}$ define the *local* star-density ρ_f. Those stars within a specific proper motion difference, $\Delta\mu_{lim}$, become candidates for companions. This value is chosen by examining the simulation and finding a value that lets in roughly 90% of the simulated binaries. One can change this parameter to either somewhat reduce the false positive rate or to allow in lower probability candidate companions.

3.1. Bayesian Statistics

Our procedure for determining the probability that two stars are physical companions relies on observed proper motion differences, $\Delta\vec{\mu} = \vec{\mu}_p - \vec{\mu}_c$, angular separation θ and positional differences of stars within a chosen range of brightness. We are not necessarily looking for bound systems; rather we seek systems that are unlikely to be the results of random distributions. Radial velocity differences are not a metric in these statistics because presently the fraction of stars with known radial velocities is small except for very nearby bright stars and because a star's radial velocity can be perturbed by a close companion. It is quite typical for spectroscopic binaries to have offsets in measured radial velocities by 20 km s^{-1} from the true barycentric velocities. With time the barycentric velocities can be determined by averaging, but often this is not yet adequately done. However, for cases in which radial velocities are known and where the barycentric motion is determined, radial velocities can be used to assess the statistical goodness of the technique of probability assignment.

All stars within a specified range in the observables are considered to be candidate companions or simply "candidates", provided that they are fainter than the provisional primary star. This jargon is chosen for simplicity of bookkeeping, even though, of course, the brightest star in a system is not always the most massive component.

Bayesian statistics can provide an estimate of the probability of association for each candidate. Given multiple observables, O_i, that each provide some discrimination on the two possibilities, either the star is a companion (c) or it is a field star (ie, not c or $\neg c$), the standard Bayesian formula in this case is,

$$P(c\,|\,O_1;O_2;...;O_i) = \frac{\prod_i P(O_i\,|\,c)P(c)}{\prod_i P(O_i\,|\,c)P(c) + \prod_i P(O_i\,|\,\neg c)P(\neg c)} \tag{4}$$

Where the numerator has the product of available probabilities for each observable having its observed value assuming that the candidate is a companion, $P(O_i|c)$. The numerator also includes a prior probability term, $P(c)$, in which knowledge of the companion probability of the ensemble of candidates or additional knowledge of the companions can be introduced. If no prior knowledge is available, then this term can be set to $\frac{1}{2}$, and at least one will have a rank ordering in the probabilities of the candidates. The denominator has a repeat of the numerator, plus a similar product of probabilities, except this time the assumption is that the candidate is not a companion.

For this work, the discriminating observables are radial separations r from parallax, proper motion differences $\Delta\mu$, so the above formula for the posterior probability of being a companion is:

$$P(c\,|\,r;\Delta\mu) \quad = \quad \frac{P(\Delta\mu\,|\,c)P(r\,|\,c)P(c)}{P(\Delta\mu\,|\,c)P(r\,|\,c)P(c) + (1 - P(r\,|\,c))(1 - P(r\,|\,c))(1 - P(c))} \tag{5}$$

With the prior P(c) set to 0.5 this provides probabilities with a starting assumption that each candidate is just as likely to be a field star as a companion. One can improve on this by providing the probability of being a companion based on statistics of the field stars that are nearby in angle, proper motion, and distance separation Δd.

$$P(c) = \frac{(1 - P(\Delta d\,|\,f))(1 - P(\Delta\mu,\theta\,|\,f))P(p)}{(1 - P(\Delta d\,|\,f))(1 - P(\Delta\mu,\theta\,|\,f))P(p) + P(\Delta d\,|\,f)P(\Delta\mu,\theta\,|\,f)(1 - P(p))} \tag{6}$$

Here, $P(\Delta d\,|\,f)$ is the probability that one or more field stars fall with radial distance less than the candidate's distance from the primary. Therefore, $(1 - P(\Delta d\,|\,f))$ is the probability that no field stars randomly fall in this range. The term $P(\Delta\mu,\theta\,|\,f)$ is the probability that one or more field stars happens to have proper motion and angular separation more similar to the primary than the candidate.

The term $P(p)$ is the probability that the provisional primary, selected in the manner in which it has, is a primary, i.e., it has at least one wide companion in the radial region that we are exploring. It is perhaps somewhat dismaying at first that $P(p)$ is needed to derive individual probabilities since normally the individual probabilities would be needed to derive it. However, as we show, it is possible to conduct control experiments, using the actual catalog data, to constrain $P(p)$.

3.1.1. $P(\Delta\mu\,|\,companion)$ and $P(r\,|\,companion)$

To calculate the probability that a binary star would have a given proper motion difference, one could calculate the intrinsic probability density function of velocities for random orbits from

Kepler's Laws and take into consideration distances, errors in distances, and errors in proper motion observations. The probability of having some specified observed proper motion difference $\Delta\mu$ assuming it is a companion, is given by the complementary cumulative distribution function (CCDF) which is the integral of the PDF over proper motion differences greater than the observed value.

$$P(\Delta\mu \,|\, c) \quad = \quad \iint_{\mu > |\Delta\mu|} PDF(\Delta\vec{\mu}) dA_{\vec{\mu}} \tag{7}$$

However, it is more straightforward to create a simulation of the star catalog (described in § 3.3), add simulated binary orbits, add observational errors and then form the histogram of the distribution of proper motions. Per Eq. (7), the cumulative distribution is reversed and this provides estimates of the probability of a companion to have the observed proper motion value. These probabilities are fit sufficiently well by the following form for the components parallel and perpendicular to the motion of the primary:

$$P(\mu_\perp \,|\, c) \quad = \quad \exp[-(\mu_\perp/\mu_0)^{\alpha_0}], \tag{8}$$

$$P(\Delta\mu_\| \,|\, c) \quad = \quad \exp[-(\Delta\mu_\|/\Delta\mu_1)^{\alpha_1}]. \tag{9}$$

The probability that a companion would have both components greater than the observed ones is,

$$P(\Delta\mu \,|\, c) \quad = \quad 1 - (1 - P(\mu_\perp \,|\, c))(1 - P(\Delta\mu_\| \,|\, c)). \tag{10}$$

The parallel and perpendicular coordinates are used here because our first-order error analysis indicates that most geometric effects will be parallel to the motion of the primary (see §§3.2 and Eq. (27) below).

For the probability based on observed 3-d radial separation, we calculate the period $\mathcal{P}$ using $(\mathcal{M}_p + \mathcal{M}_c)\mathcal{P}^2 = r^3$ and apply it to the CCDF of the DM91 distribution modified to allow for individual errors in parallax that reflect into errors in r and period of the orbit. The CCDF of this log-normal distribution is given by the complementary error function:

$$P(r \,|\, c) = \text{erfc}\left(\frac{\log(\mathcal{P}) - 4.8}{\sqrt{2}\sqrt{2.3^2 + \epsilon^2_{log\mathcal{P}}}}\right). \tag{11}$$

Of course, for radial separations of several parsecs where the system is no longer bound the DM91 distribution looses meaning, but it continues to be useful in providing a steeply descending function.

The error in r is given by:

$$\begin{aligned} \epsilon_r^2 = \quad [& \quad \left((\epsilon_{\pi_p} x_p^2)^2 + (\epsilon_{\pi_c} x_c^2)^2\right)(x_p - x_c)^2 \\ + & \quad \left((\epsilon_{\pi_p} y_p^2)^2 + (\epsilon_{\pi_c} y_c^2)^2\right)(y_p - y_c)^2 \\ + & \quad \left((\epsilon_{\pi_p} z_p^2)^2 + (\epsilon_{\pi_c} z_c^2)^2\right)(z_p - z_c)^2]/r^2 \end{aligned} \tag{12}$$

But, we need the error in the log of the period due to uncertainty in distance,

$$\epsilon_{\mathcal{P}} = \frac{3r^2}{2\mathcal{M}\mathcal{P}}\epsilon_r = \frac{3\mathcal{P}}{2r}\epsilon_r \tag{13}$$

$$\epsilon_{\log\mathcal{P}} = \frac{\epsilon_{\mathcal{P}}}{\mathcal{P}\ln(10)} = \frac{3\epsilon_r}{2\ln(10)r}. \tag{14}$$

3.1.2. $P(\Delta\mu, \theta \,|\, field)$ and $P(\Delta d \,|\, field)$

We seek the probability that one or more field stars would have a proper motion as close or closer to the primary as the candidate given the local density if stars per unit spatial and proper motion area. The number density is given by:

$$\rho_f \quad = \quad \frac{N_f}{\pi^2(\Delta\mu^2_{outer} - \Delta\mu^2_{inner})(\theta^2_{outer} - \theta^2_{inner})}. \tag{15}$$

The formula for the probability of one or more stars, chosen from a homogeneous distribution with this density, falling at separation less than θ_{pair} and proper motion difference less than $\Delta\mu$ is:

$$P(\Delta\mu, \theta \,|\, field) \quad = \quad 1 - e^{-\pi^2\rho_f\theta^2_{pair}\Delta\mu^2} \tag{16}$$

Even though this formula is formally for a constant density distribution it works well for a density changing linearly in the coordinates. However, near the peak of the density distribution with proper motion along a line of site, the curvature in the density profile can cause substantial error in the local density and it is best to simply avoid this calculation near the peak. Since the peak is where the density becomes very high and probabilities are low, this region needs to be avoided anyway. Therefore, we only consider primaries with a field density below a given threshold (Table 1).

The probability that one or more field stars would happen to have an observed distance that is less than the Δd observed for a candidate star is given by similar formulae,

$$\lambda_f \quad = \quad \frac{N_f}{2\Delta d_{max}} \tag{17}$$

$$P(\Delta d \,|\, field) \quad = \quad 1 - e^{-\lambda_f \Delta d} \tag{18}$$

3.2. Geometrically induced proper motion differences.

With increasing stellar separation there is a growth in the proper motion difference caused by various projection effects, even if the two stars have the same space motion. However, in most cases some compensation can be made for this. We can first look mathematically at the gradient of $\vec{\mu}$ due to spatial separations at constant space velocity. To search for very wide binaries, we

start by presuming space velocities are essentially the same for the sytem's stars. For a binary with a solar mass primary separated by more than 0.01 pc, the orbital velocities are < 0.78 $\mathrm{km\,s^{-1}}$. Beyond 25 pc, this corresponds to $\lesssim 6.6$ mas yr^{-1} in proper motion differences. In Galactic coordinates (ℓ, b), the vector of proper motion is composed of the two projections of the 3-d velocity onto the unit vectors in the longitude and latitude directions, divided by the distance d to the star.

$$
\begin{aligned}
\hat{\boldsymbol{\ell}} &= \frac{\hat{\boldsymbol{z}} \times \vec{\boldsymbol{d}}}{\|\hat{\boldsymbol{z}} \times \vec{\boldsymbol{d}}\|} = (-\sin\ell,\, \cos\ell,\, 0), & (19)\\
\hat{\boldsymbol{b}} &= \frac{\vec{\boldsymbol{d}} \times \hat{\boldsymbol{\ell}}}{\|\vec{\boldsymbol{d}} \times \hat{\boldsymbol{\ell}}\|} = (-\sin b\cos\ell,\, -\sin b\sin\ell,\, \cos b), & (20)\\
\vec{\boldsymbol{\mu}} &= (\mu_\ell, \mu_b) = (\frac{\vec{\boldsymbol{v}}\cdot\hat{\boldsymbol{\ell}}}{d}, \frac{\vec{\boldsymbol{v}}\cdot\hat{\boldsymbol{b}}}{d}), & (21)\\
\mu_\ell &= \left(-v_x\sin\ell + v_y\cos\ell\right)/d & (22)\\
\mu_b &= \left((-v_x\cos\ell - v_y\sin\ell)\sin b + v_z\cos b\right)/d & (23)\\
v_r &= \left(+v_x\cos\ell + v_y\sin\ell\right)\cos b + v_z\sin b\ , & (24)
\end{aligned}
$$

where $\hat{\boldsymbol{z}}$ is the unit vector to the North Galactic Pole. If distances are in pc and proper motions are in as yr^{-1}, then the radial velocities are in AU yr^{-1} (1 AU $\mathrm{yr}^{-1} \simeq 4.74$ $\mathrm{km\,s^{-1}}$). The velocity $\vec{\boldsymbol{v}}$ is relative to the sun so it is formally $\vec{\boldsymbol{v}}_* - \vec{\boldsymbol{v}}_\odot$, where $\vec{\boldsymbol{v}}_\odot$ is the velocity of the sun in the Local Standard of Rest (LSR).

The derivatives of the direction vectors:

$$
\begin{aligned}
\frac{\partial\hat{\boldsymbol{\ell}}}{\partial\ell} &= (-\cos l,\, -\sin l, 0), \qquad \frac{\partial\hat{\boldsymbol{\ell}}}{\partial b} = (0,0,0), & (25)\\
\frac{\partial\hat{\boldsymbol{b}}}{\partial l} &= -\hat{\ell}\sin b, \qquad \frac{\partial\hat{b}}{\partial b} = -\hat{\boldsymbol{d}}, & (26)
\end{aligned}
$$

can be used to derive the gradients in spherical coordinates to get a first order assessment of the geometric induced variations on the difference in proper motion between two stars moving at the same space velocity:

$$
\Delta\vec{\boldsymbol{\mu}} = -\vec{\boldsymbol{\mu}}\frac{\Delta d}{d} + \left(\mu_b\sin b - \frac{v_r}{d}\cos b,\, -\mu_\ell\sin b\right)\Delta\ell + \left(0, -\frac{v_r}{d}\right)\Delta b\ , \tag{27}
$$

where $\Delta\ell$ and Δb are the difference in longitude and latitude, in radians. Similarly, we can look at the first derivatives of the radial velocity which, if known for both components, can be taken into account when assessing whether the pair is really co-moving:

$$
\Delta v_r = d\left(\mu_\ell\cos b\Delta\ell + \mu_b\Delta b\right) \tag{28}
$$

As an example, let us examine a case where $b = 45^{\mathrm{o}}$, $\mu_\ell = \mu_b = 0.2$ as yr^{-1}, the radial velocity is -20 $\mathrm{km\,s^{-1}}$, the primary's distance is 20 pc, the companion is 1 pc farther away than the primary,

and they are separated by 1 degree per coordinate ($\Delta\ell = \Delta b = 0.0175$, separation $\sim \frac{1}{2}$ pc). We then have:

$$\begin{aligned}
\Delta\mu_\ell &= -0.2 \cdot 1/20 + \frac{\sqrt{2}}{2}\,(0.2 + 20/(4.74 \cdot 20)) \cdot 0.0175 = -0.02\,\mathrm{as\ yr^{-1}} = -20\,\mathrm{mas\ yr^{-1}} \\
\Delta\mu_b &= -0.2 \cdot 1/20 + \left(-\frac{\sqrt{2}}{2} \cdot 0.2 + 20/(4.74 \cdot 20)\right) \cdot 0.0175 = -9\,\mathrm{mas\ yr^{-1}} \\
\Delta v_r &= 4.74 \cdot 20 \cdot 0.2 \left(\frac{\sqrt{2}}{2} + 1\right) \cdot 0.0175 = 0.6\,\mathrm{km\,s^{-1}}\ .
\end{aligned}$$

Note that the changes in proper motions can be quite significant with respect to the measurement errors (typically $1-3$ mas yr^{-1} and $1-3$ km s^{-1}). This implies that very wide binaries of several degrees in separation are, in general, not found by commonality in proper motions, unless proper geometric corrections have been applied.

Eq. 27 implies that when relative distances are unknown, one can still make useful corrections using the proper motions and radial velocities. And, when radial velocities are also unknown one can still make useful corrections, by assuming $v_r = 0$, that become highly accurate for $\Delta\mu_\ell$ near the poles.

Also, one can mitigate somewhat against large uncertainty in the Δd term in Eq. (27), by taking note that this term is parallel to a system's overall proper motion. Therefore, one should treat the parallel and perpendicular components of the proper motion separately to take advantage of the perpendicular component which needs no Δd correction term and hence is less noisy.

The first order correction, Eqs. (27), is typically good to $\lesssim 10\%$ for angles $< 5^\circ$ and distance differences of $< 30\%$, except near $b = \arctan(v_r/d\mu_b)$ where the $\Delta\mu_l$ term goes to zero for changes in angle. To explore out to separations of $\sim 10^\circ$ and reach several pc physical separations, a full (nonlinear) correction for space velocities is made. We calculate the 3-d space velocity of each primary from its proper motion and radial velocity (Eqs. 29 – 31), if we have it, and, using Eqs. (22) – (23), calculate the proper motion that this space motion implies, *if it were in the direction of each companion candidate.* If there is no radial velocity for the primary, then the system is assumed to be at rest in the LSR. In those cases, the projection of the the Solar Motion in the radial direction is subtracted, using (10.0, 5.25, 7.17) km s^{-1} for the Solar Motion. As described in § 4.1, for $d < 100$ pc, there are radial velocity measures for most of the primaries.

The conversion to space velocities is the inverse of Eqs. (22) – (24) and has solution:

$$v_x = v_r \cos b \cos \ell - d\mu_\ell \sin \ell - d\mu_b \sin b \cos \ell \tag{29}$$

$$v_y = v_r \cos b \sin \ell + d\mu_\ell \cos \ell - d\mu_b \sin b \sin \ell \tag{30}$$

$$v_z = v_r \sin b + d\mu_b \cos b \tag{31}$$

To avoid excessive error arising from distance uncertainties at distances beyond 25 pc, we assume the companion is at the distance of the primary.

3.3. Simulation

A program for creating simulations of the Solar Neighborhood distribution of stars with binary systems was written to test the methodology, search for optimal parameters, and to understand the origin and behavior of false positives. The simulations cover a large range of parameters to understand the reliability and broadness of applicability of the methodology. The simulations also are used as a quick way to derive the shape of the cumulative distribution functions for the observables in an ensemble of random binary systems.

In the simulations, stars are set down with a distribution of positions and velocities that statistically imitate the HIP2 after observational errors are included. Observational errors representative of moderately faint stars in TY2 are used: $\epsilon_\mu = 1.5$ mas yr^{-1}, $\epsilon_\ell = \epsilon_b = 1$ mas. For parallax errors of the simulated stars, we use $\epsilon_\pi = 1$ mas to represent the HIP2 data. Masses are distributed with the power law $N \sim M^{-2.3}$ from 0.8 to 15 $M_\odot$ and luminosities follow a mass-luminosity relation, $L \sim M^{-3.5}$. An arbitrary fraction of the stars are given companions. The companions do not themselves host companions, e.g., no hierarchical systems are created. The orbital elements: eccentricity, inclination, longitude of the ascending node, longitude of the periapsis, and epoch are random uniform distributions. The distribution of periods is chosen to be log-normal without a long period cutoff.

We first present the relatively small false positive rate for a simulation in which no binary stars were generated. In Fig. 1 the numbers of companions with probabilities > 0.1 vs. angular separation are shown (black thick solid line), where the associated primaries are in the $25 - 50$ pc (left) and $50 - 100$ pc (right) distance ranges . The "false positive" rate is kept low by using a low value for the prior $P(p)$, namely 0.20 for $25 - 50$ pc and 0.07 for $50 - 100$ pc. These values for $P(p)$ are chosen because they work reasonably well for all that follows.

Fig. 2 shows results of an analysis of a simulation in which the semi-major axes are set by the DM91 distribution of periods but using only periods longer than the peak of the distribution at 173 yr. About 21% of the stars are primaries and 28% are companions. These rates are much higher than the observed one, considering that the mass function only goes down to 0.8 $M_\odot$, but it provides many companions and much confusion to better test the procedure. The primaries have 1, 2, 3, or 4 companions with frequency of roughly 67.8, 27.4, 4.5, and 0.2%, respectively. The green dotted line shows the number of companions created per separation bin. The solid thick line shows the number of companions found with probabilities $> 10\%$. The green thin solid line gives the number of correct primary-companion associations found. The lower green dashed line gives the number of companions ascribed to be primary-companion pairs, but neither was an input primary, i.e., it gives the number of secondary-tertiaries pairs, etc. found. The procedure recovers better than 90% of the multiple systems for separations out to 2° for $25 - 50$ pc and 1° for $50 - 100$ pc or about a parsec.

In Fig. 3 , the period distribution for the simulation is multiplied by 100 to shift the distribution to larger semi-major axes. Now, one can see that there is still reasonable recovery (>20%) of companions even at separations of 10° for $25 - 50$ pc region and 5° for $50 - 100$ pc. For $0 - 25$ pc, we get good fractional recovery until 20°.

The resulting distributions of observables for this simulation are used to set the coefficients presented in Table 1. These coefficients do not depend on the fraction of stars that hold binaries, nor do they depend strongly on the shape of the separation distribution. They do depend fairly strongly on the assumed observational errors which essentially determine the widths of the cumulative distributions. However, as the width of the distributions change, the value of $P(p)$ needs to adjust in a direction to keep the sum of the probabilities constant near the values indicated by the control experiments (next section). The net result is that the assigned probabilities change rather slowly with the observational errors assumed.

3.4. Control Experiments

We implement two kinds of control experiments that use the observed data directly rather than the simulation to assess the rate of false positives and thereby determine the prior probability $P(p)$. Using the real data for control tests provides greater confidence that minor differences between the simulation and reality do not cause inconsistencies. In the first method, the negative of the Galactic latitude is used for each star while it is considered as a primary. This moves the primary away from its companions and places it in a region with similar stellar density and velocity field. Any stars assigned high probabilities are statistical coincidences or false positives. Although there is asymetry between the two hemispheres in the observed proper motion distribution, much of this goes away after transforming to the LSR and the remaining should have a small affect on the numbers of false positives.

In the second method, all candidates are removed from each primary, and then each field star is randomly "rethrown" with new uniform random 2-d positions within the separation angle limit, θ_{outer}, and random values of $\Delta\mu$ within a circle in coordinates $(\Delta\mu_{\shortparallel}, \mu_{\perp})$ whose size is set to maintain the density in phase-space. The field star distances and brightnesses are maintained. When the control experiments are run on a simulation with zero binaries, the two control methods and the direct analysis of the simulation returns approximately the same number of false positives, within each probability bin, as they should. The first method of control experiment, with the reverse sign of b value of each primary, is shown as blue triangles in Fig. 1, where no binary stars are generated in the simulation. The second method, with field star rethrown, is shown as blue squares with error bars at the average and rms deviations of 4 realizations. For the other figures showing number versus separation, both types of control experiments are averaged together and shown as blue squares.

4. Application to the Hipparcos Catalogue

As a first application of our Bayesian probability estimator, Eqs. (5) and (6), we examine stars in the HIP2 brighter than 10th mag in V-band for possible companion stars brighter than V=12. Provisional primaries are separated into three distance intervals, by parallax distance. There are 1,041 potential primaries (V<10) within 25 pc, 4,152 in the 25 – 50 pc shell, and 14,064 in the 50 – 100 pc shell. A 15° radius around the Hyades is cut out when working with the 25 – 50 pc

primaries. A $200'$ radius around the Pleiades Cluster and also around the Coma Star Cluster are cut out for $50-100$ pc primaries. Stars with $\pi < 5$ mas are presumed to be too far away and are also removed. For companions, about 25,000 stars are brighter than V=12 and are within 110 pc.

Candidate companions and field stars are selected if their separation from the primary is $36'' < \theta_{lim} < 20^\circ$ for $d_p < 25$ pc, $36'' < \theta_{lim} < 10^\circ$ for $25 < d_p < 50$ pc, and $18'' < \theta_{lim} < 5^\circ$ for $50 < d_p < 100$ pc, (Table 1). Most HIP binaries closer than $36''$ and within 50 pc would already be known and their proper motion differences may be substantially affected by orbital motion, while our methodology is optimized for the case of low orbital speeds. Companions are not constrained to come from the same distance interval as the primary star. Table 2 presents how many potential primaries there were in each distance range and the numbers remaining after dropping ones with no stars nearby, then no candidates, then too high of a field density, and finally presents the number of primaries and candidates with probabilities over 0.1. The total probabilities given for all candidates in the entire separation range and for just those with separations < 1 pc.

Table 1 provides the final set of parameters that are used in the analysis of each distance intervals and in creating the tables and figures in this section. In addition to the coefficients for the cumulative distributions in each of the observables and the cutoffs in angle and proper motion for candidates and for field star counts, the table includes the maximum number of field stars accepted. Most field stars along a given direction are concentrated in a small range of proper-motion: consistent with expectation from the Galactic rotation and the projection of the Solar Motion along the line-of-sight. If the phase-space of the star is well centered in this "cloud", usually, the probabilities for any companions would naturally be low and the rate of false positives unacceptably high. To avoid this a star is dropped if the field phase-space density is in the 90-percentile in the density distribution. However, in the $0-25$ pc region, the number of candidates is always small, so, it is unnecessary to include this criterion there.

Histograms of the separation distributions for the HIP catalog are shown in Fig. 4 (in degrees) and Fig. 5 (in parsecs). In each diagram, the black thick line is the histogram of companions with $P > 0.1$, the blue square symbols are the averages over 5 control experiments, and the red line shows the numbers found minus the numbers in the control experiments, providing an estimate of the range of real physical companions (red error bars). This choice for $P(p)$ is simply the value that brings the sum of the probabilities in each bin into agreement with the number of companions found minus the number in the control experiments. The sum of the probabilities of companions within each separation bin (purple dash-dotted line) has been adjusted by varying $P(p)$, settling at a value of 0.20 for $25-50$ pc and 0.07 for $50-100$ pc.

The degree of agreement is startling to the authors. Since the actual distribution at these separations is very different from the DM91 distribution used in $P(r|c)$, one might worry that it would not work at all. However, all that is required for this probability is a function that falls off rapidly enough to sufficiently suppress the false positives, and the DM91 law happens to work.

For separations up to ≈ 1 pc the number of false positives found in the control sample is quite small implying that the companions found in the real sample are reliable. The breakdown by

probability interval at various separations is presented in Fig. 6; the different colored regions show the distribution contoured at 0.1, 0.25, 0.75, and 0.95 probability levels.

4.1. Radial Velocities

Radial velocities differences can be used, where available, as a check on the reasonableness of the probability assignments; therefore we searched the literature for radial velocity measures of HIP stars. Because some radial velocity (RV) catalogs in CDS[4] are not incorporated when "querying by identifier" or "querying by coordinate" from SIMBAD, we decided to use SIMBAD plus extract RV catalogs from the CDS archives. A given HIP star may be found in several catalogs and therefore have several values. The data is taken from the six catalogs enumerated below. The order is in increasing reliability and thus increasing priority, e.g., if a later catalog provides a velocity, we use that one. These numbers of obtained radial velocities with distance are plotted in Fig. 8 and tabulated in Table 3, 4, 5.

- The SIMBAD data base. While we did extract the radial velocities in batch mode, the errors could not be obtained in that way. So all RV errors for these stars are set to 10 $\mathrm{km\,s^{-1}}$. We find 36,884 HIP stars with RV data in SIMBAD.

- *The General Catalogue of Mean Radial Velocities* [GCRV; Barbier-Brossat & Figon (2000); VizieR cat. III/213]; following the description in VizieR catalog III/21 (Wilson 1953), the following values for the RV errors based on the quality factors are assigned: quality=A $\rightarrow \epsilon_{RV}$=0.5 $\mathrm{km\,s^{-1}}$, q=B $\rightarrow \epsilon_{RV}$=1.2 $\mathrm{km\,s^{-1}}$, q=C $\rightarrow \epsilon_{RV}$=2.5 $\mathrm{km\,s^{-1}}$, q=D $\rightarrow \epsilon_{RV}$=5.0 $\mathrm{km\,s^{-1}}$. Stars with quality E ($\epsilon_{RV} \geq 20$ $\mathrm{km\,s^{-1}}$) are excluded. These errors correspond more or less to the midpoints of the ranges specified by Wilson (1953). We find 21,120 HIP stars in the GCRV.

- *The Bibliographic Catalogue Of Radial Velocities* [BCRV; Malaroda et al. (2000); VizieR cat. III/249], which is up to date till 2006. This catalog required significant attention as it does not list errors on the RVs, while also many stellar names do not conform to the current SIMBAD convention. This may not be too surprising since Malaroda et al. (2000) compiled RV data from almost 1300 different publications. However, the vast majority of stars are found in just 33 different publications. We read those 33 publications and estimated an RV error for each of them. Stars from other publications are, somewhat arbitrarily assigned RV errors of 10 $\mathrm{km\,s^{-1}}$. 1,178 stars are found in more than one publication, and their weighted average values and errors are used in our database. In total, we find 14,279 HIP stars in the BCRV that are *not* in the GSCN catalog, described below.

- *The Catalogue of Radial Velocities of Galactic Stars with Astrometric Data, the Second Version* [CRVAD; Kharchenko et al. (2007); VizieR cat. III/254]. The same error assignment

[4] CDS: Centre de Données astronomiques de Strasbourg; http://cds.u-strasbg.fr/

is used here as for the GCRV above, and stars with RV quality=E are not used. We find 41,740 HIP stars in the CRVAD.

- *The Geneva-Copenhagen Survey of the Solar Neighborhood* [GCSN; Nordström et al. (2004); VizieR cat. V/117[5]]. The "median errors" as listed in the GCSN are used. We find 11,900 HIP stars in the GCSN that were not taken from the GCRV.
- *The Radial Velocity Experiment: Second Data Release* [RAVE; Zwitter et al. (2008); VizieR cat. III/257]. We use the errors as presented in the RAVE catalog. If more than one entry is present per HIP star, the weighted average for both the value and the error are used. We find 393 HIP stars in the RAVE data set.

Altogether, we have 43,047 radial velocities out of 113,942 HIP stars with positive parallaxes: the average completeness is 37.8%. The additional catalogs added 6,161 RVs to that available in SIMBAD alone. The completeness fraction is a strong function of distance (Fig. 9) and apparent magnitude. About 48% of stars at a distance of 100 pc have a measured radial velocity, but within 100 pc, RV data is available for almost two-thirds of stars. Of the systems where both the primary and candidate have a measured RV, $\sim$87% systems have errors $<$10 km s^{-1}, with an average of about 1.5 km s^{-1}.

For those stars with RV data in multiple catalogs, we compared the various values to assess their external accurcy. If a star is in fact a binary, then the cataloged values might have been taken at different orbital phases, which would result in a scatter that is larger than expected on the basis of the reported internal errors. We kept track of the range of the reported RVs for a given star, and the errors. If this range exceeds 1.6 times the error *and* the velocity range exceeds 9 km s^{-1}, then the star is deemed to have a discrepant RV, which may be the result of (unsuspected) binarity. About 13% of HIP stars are classified as some sort of binary, while the ones with discrepant radial velocities are classified as binaries about four times more often ($\sim$55%). For our subsample of candidate very wide binaries with discrepant RVs, about 75% are known or suspected binaries. The whole sample of very wide binary candidates has a rate of known/suspected binaries that is 3x larger than for the whole HIP. It is important to note that these known/suspected binaries most often refer to companions closer to our candidates, *not* the candidates we report in this paper. We interpret this as evidence that very wide binaries are often found in hierarchical systems, as suggested by a number of authors (Makarov et al. 2008; Caballero 2009, 2010; Kouwenhoven et al. 2010).

4.2. Stellar Masses

It's useful to obtain mass estimates for the stars in these systems to learn how their separations compare with their nominal tidal radii. Absolute magnitudes (M_V) and stellar masses ($\mathcal{M}$) are

[5]The original catalog V/117 is hard to find on VizieR because it is claimed to be obsoleted by V/130. However, V/130 contains significantly less information, i.e., neither mass estimates nor the raw RV information. This catalog can be accessed by going directly to the source: `http://vizier.u-strasbg.fr/viz-bin/VizieR?-source=V/117`.

assigned based solely on stellar color (B-V), via the mass-luminosity-color relation for the main-sequence (MS). We note that the so-determined $M_V(B-V)$ relation forms a lower envelope to the HIP color-magnitude diagram for main-sequence stars: our relation is close to, but not identical to the zero-age main sequence (ZAMS) $M_V(B-V)$ relation. The starting point is Tables 3.13 and 3.10 in Binney & Merrifield (1998), which list stellar colors, masses and absolute magnitudes as a function of spectral type. Next, the colors are updated in the following way. 1) The BVRI colors for O5 – M5 stars are taken from Cox (2000), where this source is also used for the values of effective temperature (T_{eff}). 2) BVRI colors are preferentially taken from Bessell (1990) for types M0 – M6. 3) The previous references are superseded by VRIJHK data from Bessell (1991) for M6 – M7.5 dwarfs. 4) Average B-V colors are computed for late-type M dwarfs by averaging the colors and M_V of several such dwarfs extracted from the NSTARS database[6]. 5) We examine the B-V data for early M dwarfs from Koen et al. (2010), and , to be consistent with the upper MS, we determine a lower-envelope to their HR diagram[7].

For all cases, we use the dependence of a given color on T_{eff} to interpolate over missing values[8]. Then, for each star, their B-V values are used to compute their main-sequence masses. However, still not all stars have B-V values, and we estimate their masses from the weighted average of a number of other color-mass relations: $\mathcal{M}_{V-I}$, $\mathcal{M}_{V-J}$, $\mathcal{M}_{V-H}$, $\mathcal{M}_{V-K}$, $\mathcal{M}_{J-H}$, $\mathcal{M}_{J-K}$, $\mathcal{M}_{H-K}$ and $\mathcal{M}_{H-K}$[9].

Lastly, a correction is made for the effects of stellar evolution as stars evolve off the zero-age main sequence. The GCSN catalog (Nordström et al. 2004) provides stellar masses corrected for stellar evolutionary effects, absolute magnitudes and $(B-V)$ colors for 14,955 HIP stars. We compute a two-dimensional look-up table (map), with the average mass as a function of (B-V) and M_V. This contour map, Fig. 10, shows for any star that falls in a defined part of the map, the corresponding mass value used. For stars in undefined parts of the map, the color-mass relation for the MS is used. The masses are listed in column #14 of tables 3 – 5. Note that these masses are insufficient to decide whether or not a potential pair is bound because, quite often, the system contains stars that are not a part of HIP.

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[6] We estimate B-V=1.91 ± 0.064, 1.99 ± 0.009, 2.05 ± 0.078, 2.16 ± 0.8 and 2.10 for types M5.5, M6.0, M6.5, M7.0 and M8.0, respectively.

[7] We use: B-V=1.47, 1.51, 1.577, 1.677 for types M1, M2, M3 and M4, respectively.

[8] Not all stars in HIP have B-V colors. Furthermore, because the B-V colors in HIP are derived in a non-homogeneous manner (partly derived from ground-based observations and partly from the TY1 photometry), we use our own estimation for the B-V values on the Johnson system based on TY2 colors: $(\text{B-V})_J = 0.85\,(\text{B-V})_{T2}$. This transformation is accurate to ± 0.071 mag, which is 2.2 times larger than the errors on B-V as listed in HIP. Note that we use the TY2 colors, which differ substantially (at fainter magnitudes) from the TY1 colors listed in HIP.

[9] The J, H & K magnitudes (and errors) are extracted from the 2MASS database.

4.3. Tabulated Results

The focus of this research has been on very wide companions in the 25 – 100 pc interval; however, we have applied a similar methodology to the 0 – 25 pc interval even though it has not been optimized for this regime. Fortunately, a number of high probability companions are discovered in this region out to 20° in separation. The physical systems and their probabilities are presented in tables 3, 4 and 5 for the distance ranges 0 – 25 pc, 25 – 50 pc and 50 – 100 pc, respectively. The names (columns #1 & #2), positions (cols. #3 & #4) and the visual magnitude (col. #5) are taken from HIP. The spectral type (#6) is taken from SIMBAD[10]. We also list in this column one of ten possible types on the basis of the 67 "Other object type" identifications in SIMBAD (such as, "*in**," "EB," "YSO," mean: "star in double star," "Eclipsing binary" and "young stellar object," respectively). The codes are: UkN (not known), SpB (spectroscopic binary), EcB (eclipsing binary), BiN (other binary), RoT (star with high rotation velocity), VaR (variable star), YnG (young/pre-MS star), ClN (star in cluster of nebula), F/E (flare or eruptive star), OtH (generic star or other object).

The proper motions (#7 & #8) are from TY2 when available, otherwise they are from HIP2. Columns #9 and #10 list the proper motions differences *corrected* for geometric effects as described in §3.2 above. In detail, our procedure is as follows. First, for each potential companion star, its space velocities (v_x, v_y, v_z) is computed according to Eqs. (29 – 31) using their angular coordinates, distances, and proper motions. However, beyond 25 pc, the distance of the primaries is used because $P(\Delta\mu \,|\, c)$ is meant to give the probability of having $\Delta\mu$ assuming that it is a companion, and should not be reduced by a large distance error. Beyond ∼25 pc, the typical parallax errors, imply distance errors that significantly exceed the orbit size and would artificially inflate the inferred proper motion corrections. We use the RV of the primary because it is usually the better studied and, therefore, is more likely to provide the barycentric velocity of the system.

In the next step, these space velocities are transformed into the expected proper motions if it were at the position of the primary. The corrected proper motion differences listed in columns #9 and #10 are the difference between the proper motion components of the primary and the candidate if it were seen with the same projections onto the sky as the primary. In the same columns, the errors on these $\Delta\mu^{cor}$ values are listed, which are derived via propagating the errors on the observables. The procedure inflates the observed proper motion errors, typically by factors of 2 to 4. This is to be expected because the corrected proper motion difference contains 3 or 4 terms (cf. Eq. [27]) that are RSS-ed together to yield the errors.

The distance (#11) is the inverse of π obtained from HIP2. Column #12 contains the radial velocities compiled in §4.1. For Column #13, the proper motion and radial velocity of the companion are transformed to LSR space velocities at its position and then the radial velocity is calculated from that space velocity translated to the position of the primary. Beyond 25 pc, we again use the primary's distance in the first step instead of the companion's to minimize correction errors due to distance uncertainties. The errors on the corrected RVs are nearly the same as

[10] http://simbad.u-strasbg.fr/simbad/

the errors on the measurements themselves because the corrections are typically small. The RV differences are plotted in Fig. 8. The separation (#15) follows from the positions of the primaries and companions and the distance of the primary.

Column #16 gives the probability of the candidate being a true companion of the primary according to Eq. (5).

The last column (#17) provides Bayer-Flamsteed (BF) designations and common names for the stars. These are extracted from the "HD-DM-GC-HR-HIP-Bayer-Flamsteed Cross Index" (Kostjuk 2004), with the following modifications: 1) a common name is not listed if the same name is used for another HD star, unless the system is a close pair, 2) if more than one common name was specified, the shortest one is used. Note that in some cases, Kostjuk (2004) uses as the BF designation *both* the numeric and the Greek designation. If the star has another HIP star as a companion (as listed in HIP), we add the known HIP numbers after the "kn:" designation.

4.4. Some Notable Companion Pairs

We find these unnoticed naked-eye companions ($<6^{th}$ mag): Capella & 50 Per, δ Vel & HIP 43797, Alioth (ϵ UMa),Megrez (δ UMa) & Alcor, γ & τ Cen, ϕ Eri & η Hor, 62 & 63 Cnc, γ & τ Per, ζ & δ Hya, β^{01}, β^{02} & β^{03} Tuc, N Vel & HIP 47479, HIP 98174 & HIP 97646, 44 & 58 Oph, s Eri & HIP 14913, and π & ρ Cep. High probabality fainter companions ($> 6^{th}$ mag) of stars $V < 4$ are found for: Fomalhaut (α PsA), γ UMa, α Lib, Alvahet (ι Cephi), δ Ara, Chow (β Ser), ι Peg, β Pic, κ Phe. and γ Tuc

4.4.1. The Capella System

We identify the T Tauri star 50 Per (HIP 19335) as a P = 0.2 candidate companion of Capella. While these stars have almost equal radial velocities and corrected proper motion differences, they are separated by almost 15^{o} on the sky (5.4 pc) and have a 3D separation of 8.9 pc. The corrected proper motion differences ($\sim$12 $\pm$ 5 mas yr^{-1}) may seem a bit too large to accept this system as a real wide-binary candidate, but this difference is time dependent. Capella is an almost equal-mass spectroscopic binary with component masses 2.466 & 2.443 $M_{\odot}$. It has, $12'$ away, known companion WDS 05167+4600 HL which comprises the M1V star GJ 195 A (V=10.16 mag) and the M5 dwarf GJ 195 B (V=13.7 mag), which are separated by $6''$. 50 Per itself is paired here with HIP 19255 at a separation of $\sim$15,200 AU ($\sim$740$''$). Furthermore, the MSC identifies both 50 Per and HIP 19255 as possible binaries themselves, while these systems orbit each other in about one million years at an equivalent circular orbit speed of $\sim$0.45 km s^{-1} (4.8 mas yr^{-1}). The MSC reports a total mass 3.64 $M_{\odot}$ for the 50 Per and HIP 19255 system. The two components of HIP 19255 are separated by $3\farcs87$ and orbit each other in 590 years ($v_{orb} \sim$ 4 km s^{-1}= 42.5 mas yr^{-1}). This orbital speed is more than sufficient to account for the corrected proper motion difference between 50 Per and HIP 19255. We find the following about the putative 50 Per binary: 1) The HIP2 and TY2 proper motions for 50 Per differ by 2.7 $\pm$ 1.7 mas yr^{-1},

2) HIP finds an acceleration in the proper motion which Makarov & Kaplan (2005) estimate to be 5.8 ± 3 mas yr^{-2} (∼0.5 km s^{-1} yr^{-2}), and 3) the GCSN reports 8 observations over a period of 7 years with measurements errors of 0.2 km s^{-1} and an ensemble error of 0.6 km s^{-1}: this is consistent with an acceleration of 0.286 ± 0.06 km s^{-1} yr^{-2}. Thus, both RV and proper motion data indicate the presence of an unseen companion for 50 Per. The corrected proper motion and RV differences between 50 Per and Capella are bridged at the observed accelerations of 50 Per after 4 ± 3 and 17 ± 4 years, respectively.

The total mass for the Capella/50 Per system is (5.88+3.64)=9.52 $M_\odot$, so that the Jacobi radius is 2.8 pc, or about three times smaller than the observed separation. Thus, Capella and 50 Per may be an example of an escaped binary system.

Although we also list the known double, HIP 26779 and HIP 26801, at 509$'$ or 2 pc from Capella as having very high probability for being physically related to Capella, unless the radial velocity is just wrong, we suspect that these are false positives. The barycentric velocity is well established, therefore the ∼ 25 km s^{-1} difference in radial velocities is hard to explain unless this system is just passing by.

5. Conclusions

We have applied a full Bayesian approach to assigning probabilities of companionship between HIP stars separated by more than 0.01 pc. By companionship we mean either bound gravitationally as in a system of small numbers of stars or co-moving with nearly the same velocity as in an escaped previously bound component. After subtracting the expected numbers of false positives derived from control experiments, a population of companions extending out to 8 pc in separation remains. Some of these very wide systems contain hierarchies of fairly massive stars that extend the tidal radii out to unusually large distances, but it is likely that others are recently unbound systems that continue to travel along nearly the same trajectory. While some of these seem to be parts of known nearby moving clusters or associations (e.g., Tucanae Stream, Hyades Stream, UMa Moving Cluster, β Pic Moving Group, and TW Hydrae Association), this procedure brings to focus even higher density knots within them, which should be far more persistant than the rest of the association either as a bound system or a tight stream. The amount of time after breakup of an open cluster or binary system for which companions stay in close proximity may be an important constraint on the mass and distribution of dark matter candidates such as dark subhalos.

Our statistical method finds both many highly significant pairings that are missed by previous techniques and assigns reasonable probabilities for companions even in regions previously considered too complicated or crowded. In the 1 – 100 pc distance range, we find altogether ∼222 high probability HIP-HIP companions with separations between 0.01 – 1 pc, and we find strong evidence for a population of companions separated by 1 – 8 pc with ∼ 314 stars. In just the 0 – 25 pc range, we find ∼34 companions with separations 0.01 – 1 pc and ∼50 companions with separations 1 pc – 8 pc. Our preliminary investigations do not show any obvious trend for the excess of wide/escaped binaries along the Galactic rotation direction.

As displayed in Fig. 8, we find good agreement between the radial velocities of the primary and the corrected RV of the candidate companions: 56% have velocity differences $< 6.8\ \mathrm{km\,s^{-1}}$ (about 3σ). For comparison, the distribution of RV differences of random nearby HIP-HIP pairs closely resembles a zero-centered Gaussian with a dispersion of $\sim$37.5 $\mathrm{km\,s^{-1}}$, which leads to a 15.8% chance that a random pair would have a velocity difference as small as 6.8 $\mathrm{km\,s^{-1}}$. In addition, unresolved spectroscopic binaries can induce RV differences of order $10 - 30\ \mathrm{km\,s^{-1}}$, and so pairs with substantial RV differences might in fact be physically associated. Therefore, the fraction of pairs with small true RV differences could be significanly higher.

In some individual cases, such as Capella two of its candidate companions (HIP 26779 & 26801), the RV data indicates that the candidates are not real. Out of 426 candidates with radial velocities, we find 187 (44%) pairs for which the corrected radial velocities deviate by more than three times the errors: most of these systems might qualify as false positives. This rate of potential false positives agrees excellently with the rate identified in the control experiments (Fig. 5 and Table 5) of 428 control candidates out of 964 HIP candidates or 44%.

Figs. 2 and 4 indicate that the classical log-normal period distribution (DM91) results in a distribution of pair separations that is very different from the one we observe. To double check this, we use another simulation, where *each* HIP star is assigned a secondary with a mass drawn from the initial mass function. The absolute magnitudes for these simulated stars are estimated by applying the inverse of the procedure outlined in §§4.2 above. We then use the magnitude-completeness function of HIP (as determined by comparing it to the TY2 magnitude counts) to decide to accept or reject a given simulated secondary. While this procedure more-or-less reproduces the *number* of known HIP-HIP binaries, the distribution of separations resembles the results obtained from our simulation (Fig. 2), but at lower amplitude. An attempt was made to match more closely our observed distribution by changing the location and width of the peak of the log-normal period distribution, and the form of the IMF. None of these experiments succeeded. We tentatively conclude that the observed distribution of separations is incompatible with the log-normal period distribution of nearby G-type field stars as observed by Duquennoy & Mayor (1991). However, we also must acknowledge that the non-random selection of fainter stars in HIP and the fact that this catalog is magnitude limited renders extractions of overall statistics on true binarity rates quite uncertain.

The very wide systems found here are all smaller than 6.2 r_J and seem to be distributed as suggested by Jiang & Tremaine (2010), with a minimum at about r_J, and a rising population of escaped companions at larger separations. The relative velocities are a more stringent criterion: from Fig. 6 of Jiang & Tremaine (2010), we infer that escaped binaries should have $\Delta v/v_J \lesssim 30$. About 72% of the our systems satisfy this criterion. Including the observational errors, 89% (98%) of our very wide systems satisfy the criterion within 1σ (2σ). Thus, we are confident that most of these systems qualify as bona fide escaped bound systems.

However, they may not have begun as simple binary sytems. Other possible sources are the remnants of dissolving low-density clusters of stars. Kouwenhoven et al. (2010) show that dissolving clusters can produce very wide binaries whose separation can easily reach parsecs, and even have rising distributions at separations around one parsec. In fact, Kouwenhoven et al.

(2010) argue that the size of the semi-major axis of *young* wide binaries is similar to the initial size of the cluster from which they formed. Our systems are moderately young (typical mass $1.5 M_{\odot}$), and so the bound ones may still reflect the size of their birth places. Another prediction Kouwenhoven et al. (2010) make is that very wide binaries should be preferentially hierarchical with each of the wide components being binaries by themselves. Indeed there are observations that are consistent with this prediction (Makarov et al. 2008; Caballero 2009, 2010). For the few systems that we have thus far tried to collect possible companions from the literature, we do indeed find a preponderance of hierarchical systems.

We have discovered some hitherto unnoticed pairing of very nearby stars and a large number of pairings at record separations. Subhalos would greatly accelerate the disruption of wide binaries if they are an important contributor to the small scale potential locally in the Galaxy. Unfortunately, the distribution of subhalos in the Galaxy at the solar radius is not yet well predicted by N-body or hydrodynamical simulations (Gan et al. 2010). Since companionship of escaped binary companions at large separations is very fragile, requiring comoving velocities to remain $\lesssim 1\ \mathrm{km\,s^{-1}}$, statistics on the number of very wide companions and their ages should lead to useful limits on the masses and number densities of dark matter subhalos.

Statistical algorithms for ascertaining probabilities of association and/or boundedness in large astrometric surveys with high precision will become more effective as larger and more precise astrometric surveys come along, such as Pan-Starrs (Chambers 2005), LSST (Ivezić et al. 2008), and Gaia (Perryman 2002; Lindegren et al. 2008). The astrometric data from Gaia will be about 10 times better than the positional data obtained from the former two ground-based projects. When available, such data will enable a full mapping of the six-dimensional phase-space distribution of any potential physical binary. To facilitate the analysis of these future catalogs, as well as the analysis of the existing astrometric catalogs, we investigated the reliability of Bayesian algorithms for providing realistic probabilities of extremely wide companions and found it to be quite successful even when implemented in only simplified form. In the future we hope to make more complete statistical use of measurement errors, magnitude binning, and incorporation of radial velocities and to apply these to the full TY2.

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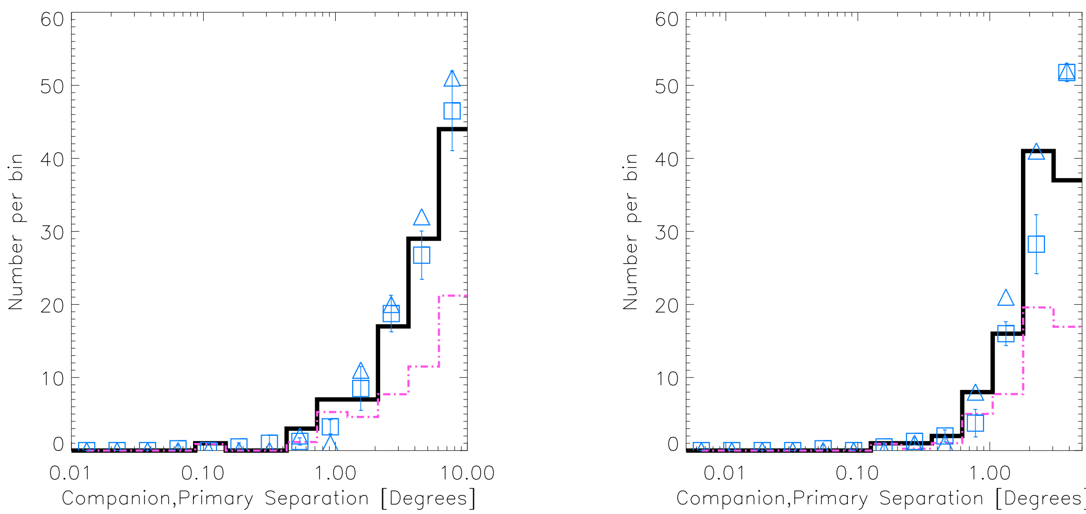
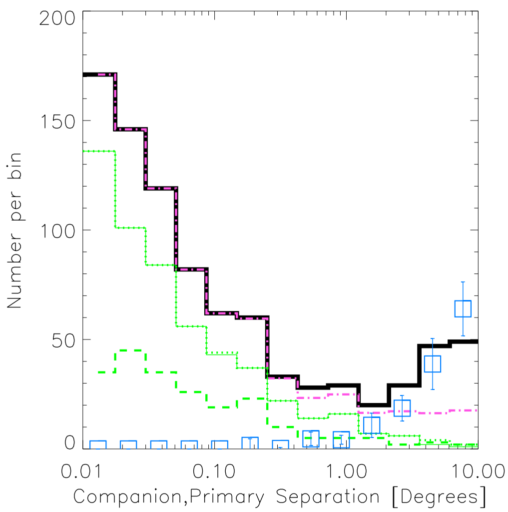


Fig. 1.— *Simulation: Number vs. Angular Separation with No Companions* - The Local Neighborhood is simulated but with no binary systems included. The diagrams show numbers of companions per logarithmic separation bin with probability > 10%. Since there are no companions here, these are all false positives. The left side shows results for primaries between 25 – 50 pc, and the right side is for 50 – 100 pc. The solid thick line gives the numbers found in an analysis of the simulation similar to one we do for the Hipparcos Catalogue. The control experiment in which b = -b for the primaries is shown as triangles. The average over 4 "'rethrow" control experiments is shown as blue squares and the variance is shown in error bars. The purple dash-dotted line is the sum of the probabilities of companions within each separation bin.



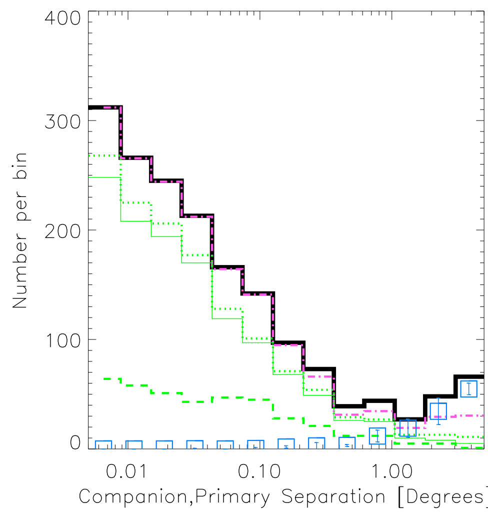


Fig. 2.— *Simulated Number vs. Angular Separation with DM91 Binary Distribution* - Results of a simulation with about 50% of the stars being physically related companions that follow the DM91 binary distribution. The left plot is for primaries between 25 – 50 pc, and the right is for 50 – 100 pc. The green dotted line shows the number of companions per logarithmic separation bin created in the simulation within the distance interval. The black solid line shows the number of companion candidates found with probabilities $> 10\%$. The green thin solid line gives the number of these that are correct primary-companion associations and the lower green dashed line gives the number where the primary was missed but two companions are scribed to be a primary-companion pair. The average over 4 rethrow control experiments plus a reversal of Galactic latitude is shown as blue squares with error bars. The purple dashed-dotted line is the sum of the probabilities of companions within each bin.

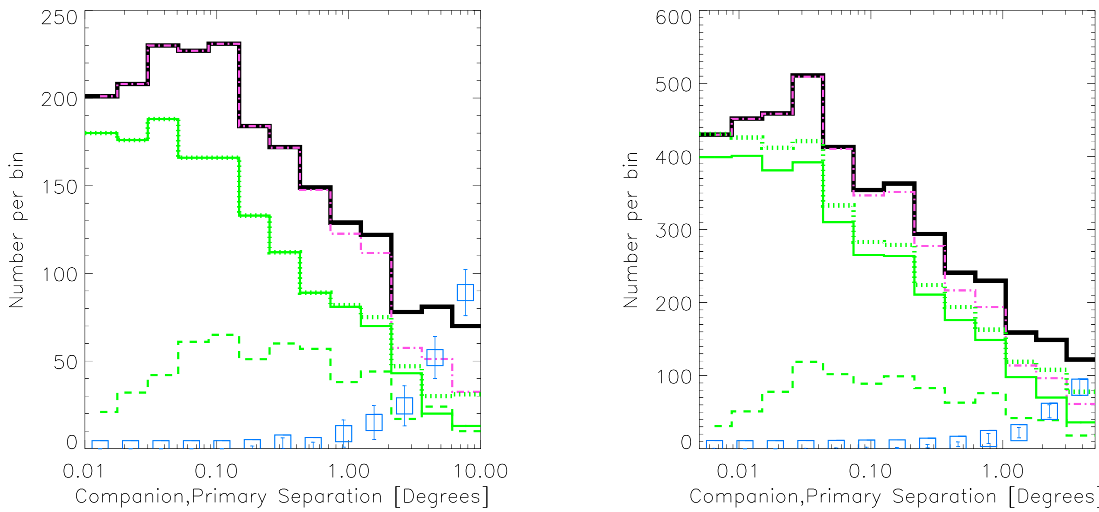


Fig. 3.— *Simulated Number vs. Angular Separation with Expanded DM91 Binary Distribution* - Same as previous figure, but periods of the bound systems were multiplied by 100 to produce more companions at much larger radii. Now one can compare at very wide separations how many primary-companions are correctly caught (green thin solid line) compared to how many are in the simulation (green dotted line).

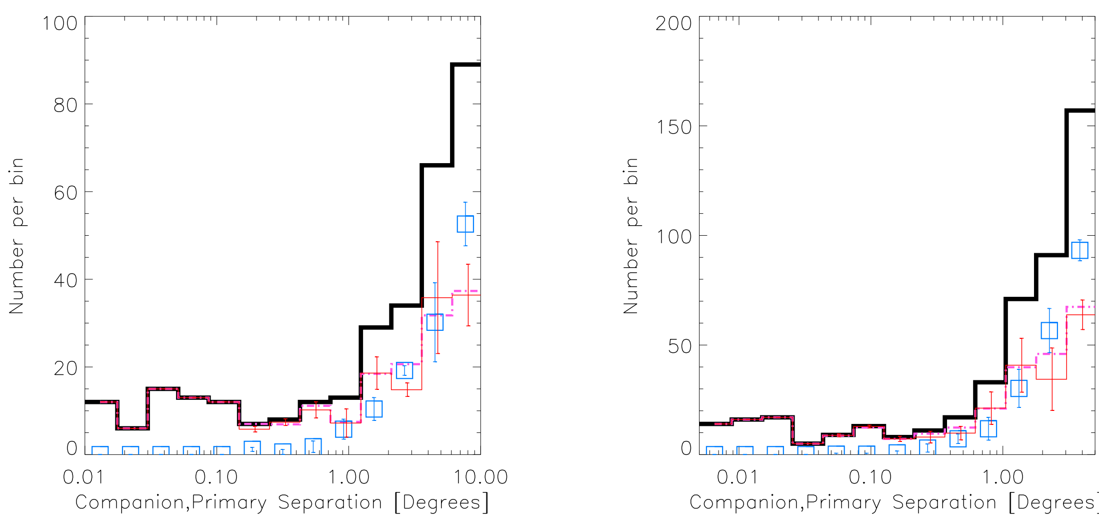


Fig. 4.— *Number vs. Angular Separation of Hipparcos Companions* - results of the Hipparcos Catalogue for primaries between 25 - 50 pc (left) and for 50 - 100 pc (right). The black thick solid line shows the number of companions found with probabilities > 10%. The averages over 4 rethrow control experiments and 1 reversal of Galactic latitude are shown as blue squares with error bars. The red thin line with error bars shows the observed minus the averages of the control experiments and therefore provides an estimate of the number of real companions in the Hipparcos Catalogue. The purple dash-dotted line is the sum of the companions' probabilities within each bin. Note how different this figure is from the previous figures of simulations.

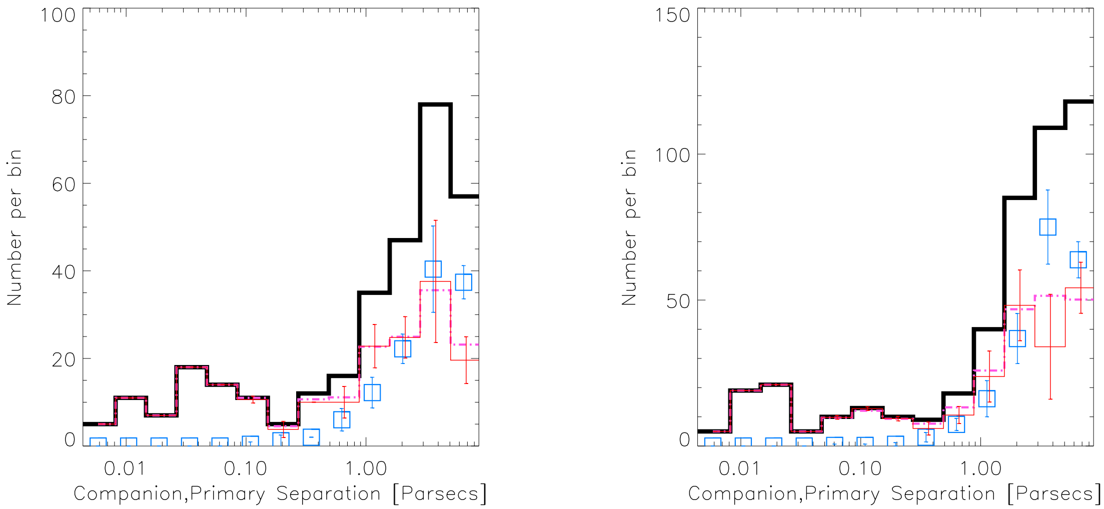


Fig. 5.— *Number vs. Physical Separation of Hipparcos Companions* - Same as in previous figure, but bins are now in logarithmic separation in parsecs based on parallax measurements of primaries.

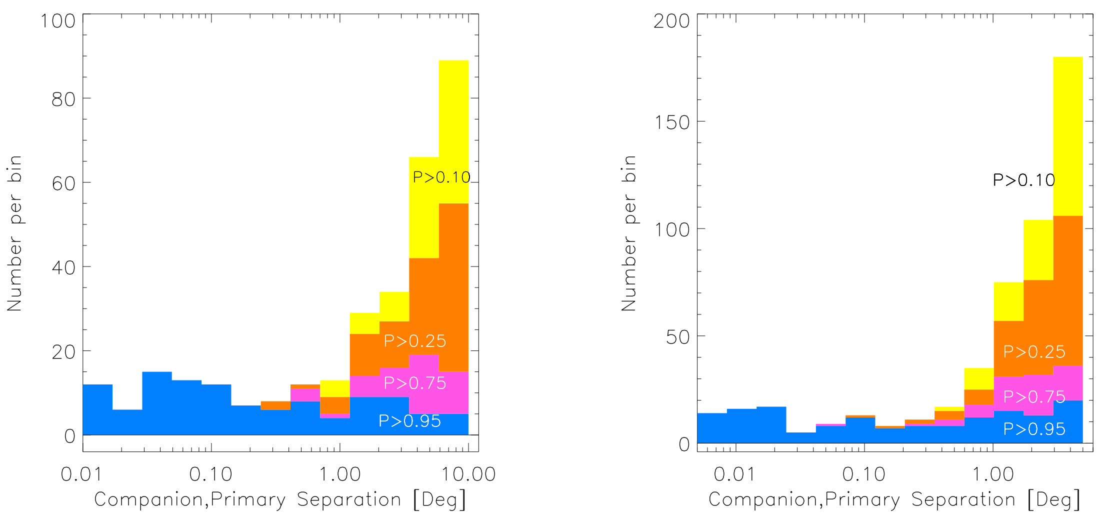


Fig. 6.— *Number and Probability vs. Angular Separation of Hipparcos Companions* - The companion separation histogram showing the contributions from different probability ranges. The contribution from probabilities > 0.95 is blue, $0.75 < P < 0.95$ is green, $0.25 < P < 0.75$ is orange, and $0.1 < P < 0.25$ is yellow. The left is for primaries between 25 - 50 pc, and the right is for 50 - 100 pc.

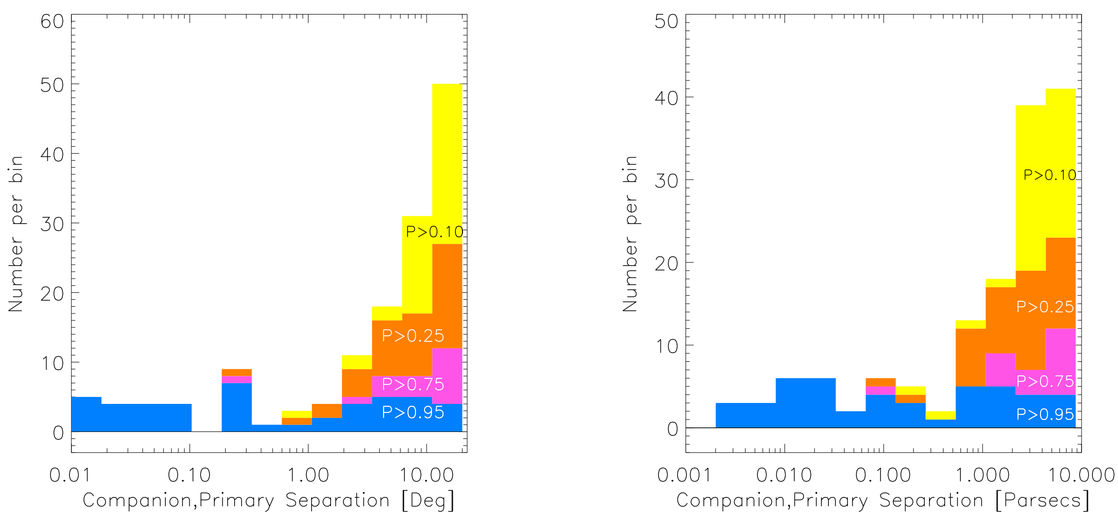


Fig. 7.— *Number and Probability vs. Separation, 0 – 25 pc distances* - The companion separation histogram for primaries within 25 pc showing the contributions from different probability ranges as in previous figure. The left plot shows angular separation and the right is angular separation times distance to give projected separation in parsecs.

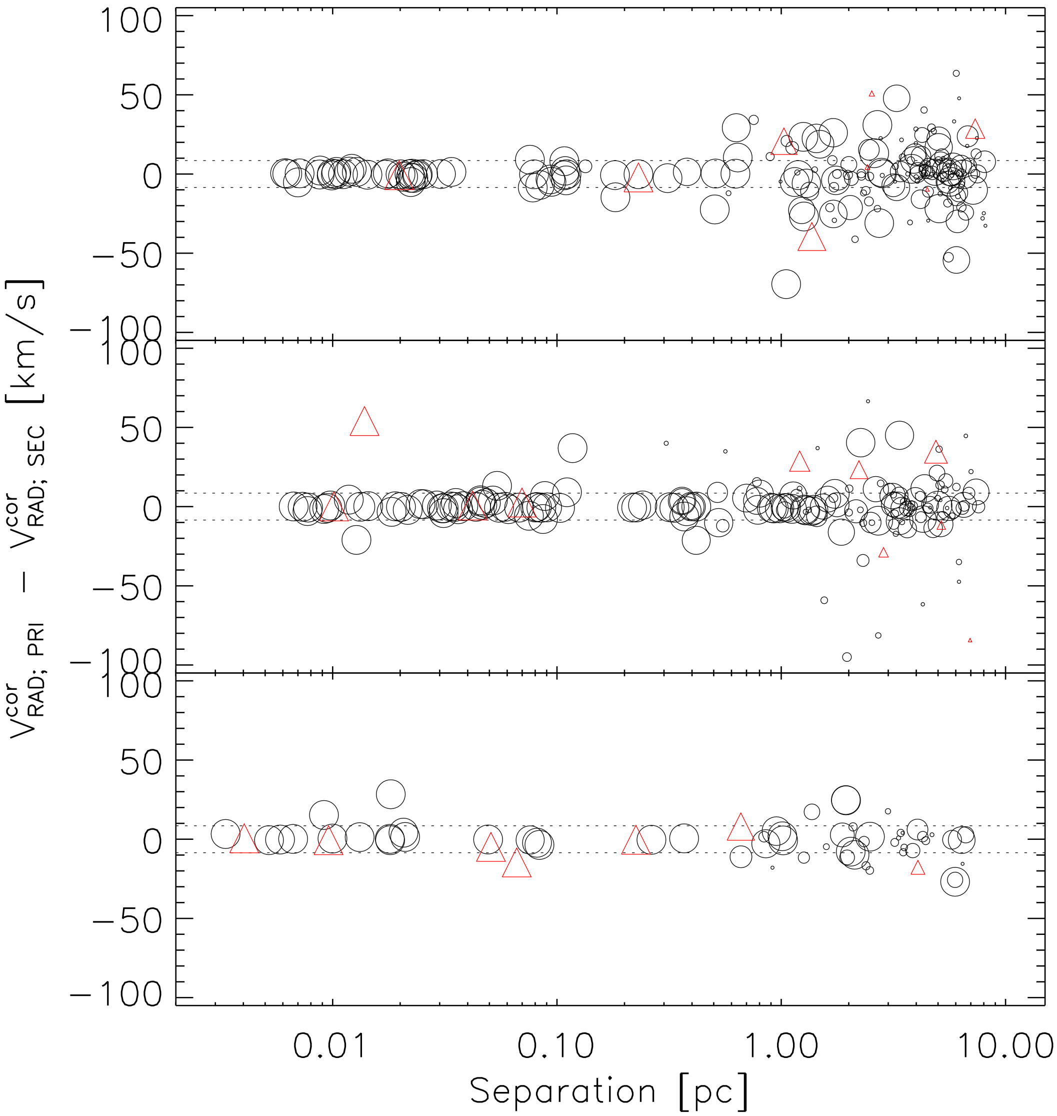


Fig. 8.— *Radial Velocity Differences* - Corrected radial velocity differences vs. separation in the plane of the sky in parsecs for Hipparcos stars in which radial velocities for both primary and companion are available. Triangles are used for stars listed in the SIMBAD database to be some kind of binary. The size of the symbol is proportional to the probability of companionship down to P = 0.1. The primary's space motion is transformed to the direction of the primary to obtain the expected radial velocity of each companion and then the companions' radial velocities are subtracted. The dispersion is much less than expected if randomly drawn from the radial velocities distribution in the Solar Neighborhood. Since the difference in radial velocity was not used in calculating probabilities, the good agreement of the majority of systems provides high confidence that the technique can find physical companions. The top frame is for primaries between 50 – 100 pc, middle is 25 – 50 pc, and the bottom is 0 – 25 pc.

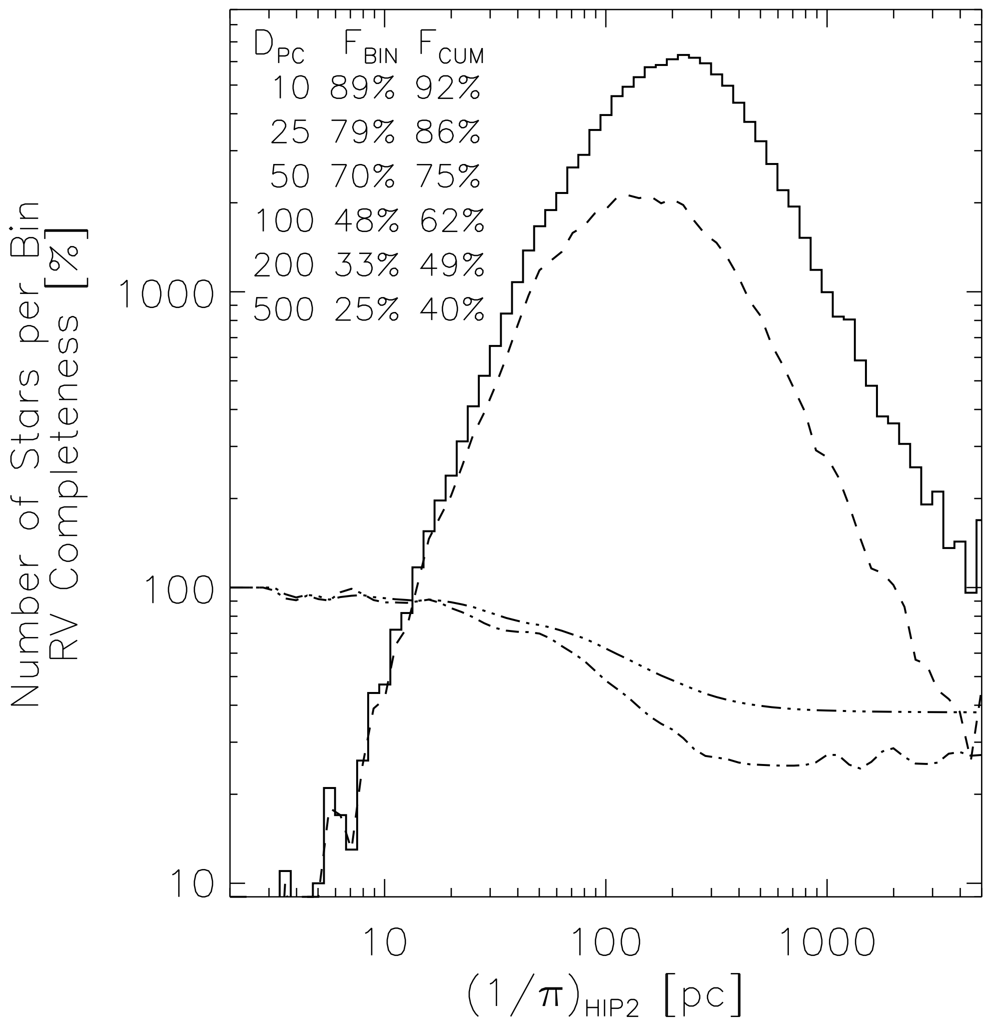


Fig. 9.— *RV statistics in of Hipparcos Stars* - The number of HIP stars (per bin) as a function of the inverse of π as listed in HIP2 (histogram; positive parallaxes only). The thick dashed line is the number of stars in our radial velocity database. We show two versions of the completeness of our radial velocity catalog: 1) the completeness per bin (F_{BIN}; thick dash-dotted line) is the ratio of the number of stars with RVs to the number of stars, and 2) the cumulative completeness (F_{cum}; dash-triple-dotted line) which is the total number of stars with RVs up to distance $1/\pi$, divided by the total number of stars out to the same distance. We list both completeness values at some representative distances. Note that, since the typical parallax errors are of order $1-2$ mas, distances beyond a few hundred parsec are not very well determined.

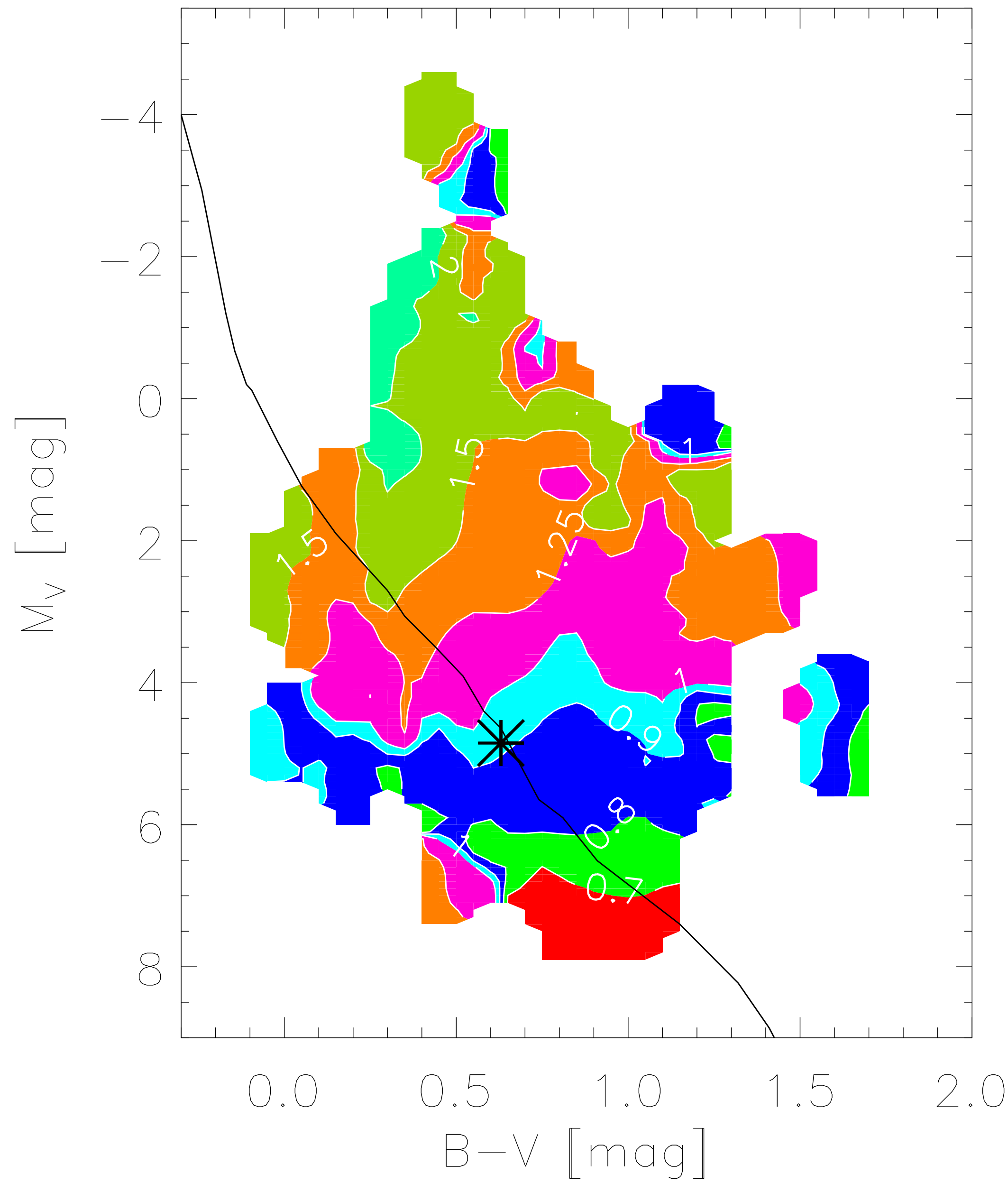


Fig. 10.— *GCSN Mass Map* - The mass as determined from the GCSN as a function of (B-V)-color (abscissa) and absolute magnitude (ordinate). The contours are labeled by the mass values The solid line represents the main sequence, and the star-symbol the location of the Sun. The fact that the Sun does not lie in the $\mathcal{M}$=1 contour, but at $\mathcal{M}$ = 0.925, indicates that the errors on the inferred masses are not negligible: about 7.5% on the MS, about 15% below the MS and up to 20% towards the top and right-hand side of the map.

Table 1. Parameters for Probability Estimator

Distance pc	$\Delta\mu_{lim}$ mas yr^{-1}	$\Delta\mu_{inner}$ mas yr^{-1}	$\Delta\mu_{outer}$ mas yr^{-1}	Δd_{max} pc	θ_{inner} deg	θ_{outer} deg	μ_0 mas yr^{-1}	α_0 ···	$\Delta\mu_1$ mas yr^{-1}	α_1 ···	N_f^{max} ···
0 – 25	35	45	100	20	0.01	20	10.0	0.97	7.13	0.97	None
25 – 50	25	35	75	15	0.01	10	3.44	0.93	3.39	0.78	12
50 – 100	10	20	50	20	0.005	5	2.09	1.06	2.28	1.15	10

Table 2. Attrition of Primary Stars

Distance	$V < 10$	Has Field	N_f $< N_{f,max}$	Has Cs	# of Cs $P > 0.1$	# of Ps $P_p > 0.1$	N_c - N_c^{ctrl}	$(N_c - N_c^{ctrl})(< 1pc)$	$\sum P$	$\sum P_{<1pc}$
0 – 25	1041	786	786	369	144	111	84	34	85.7	26.9
25 – 50	4152	2916	2889	1119	316	265	194	89	198.7	72.5
50 – 100	14064	9018	8861	2090	504	464	258	99	301.3	106.5
Total	19257	12720	12536	3578	964	840	536	222	585.7	205.9

Note. — Column 1 - distance interval of the row, Column 2 - Number of stars brighter than V=10, Column 3 - Number left after removing stars with no field stars or candidate companions, Column 4 - Number left after removing those with too high field phase-space density, Column 5 - Number left after removing those with no candidates, Column 6 - Same as 5 but for separation ¡ 1 pc only Column 7 - Number of candidates with $P > 0.1$, Column 8 - Number of primaries with at least 1 candidate with $P > 0.1$, Column 9 - Number of candidates - Number of candidates in control experiments with $P > 0.1$, Column 10 - $\sum P$ for candidates with $P > 0.1$, Column 11 - $\sum P$ for candidates with $P > 0.1$ and separated by less than 1 pc.

Table 3. Candidate Companions for 111 Candidate Primaries within 25 pc.

Indx	Pri	Cmp	ℓ	b	V	Type	μ_l	μ_b	$\Delta\mu_\ell^{cor}$	$\Delta\mu_b^{cor}$	d	v_r	Δv_r^{cor}	$\mathcal{M}$	$\Delta\theta d_p$	Prob	Comment
			deg	deg	mag		mas yr^{-1}				pc	km s^{-1}		$M_\odot$	pc		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1	473		114.6	-16.3	8.20 (78)	K6V:;SpB	844.4	-312.7			11.3±0.2	0.6		0.51			
	473	428	114.6	-16.3	9.95	M2e;OtH	826.6	-309.8	21.8 ±20.3	-4.9 ±7.7	11.3±0.2	0.3	0.2±0.6	0.45	0.0180	1.000	
2	518		117.0	-3.9	5.98 (41)	G5V;SpB	271.7	-17.6			21.5±0.3	-8.0		0.98			
	518	916	117.7	-4.1	9.50	K7;UnK	234.8	-16.9	-26.4 ±12.1	3.3 ±3.0	28.1±1.5			0.63	0.2520	0.690	
3	1292		304.9	-37.1	6.59 (52)	G8V;YnG	-437.2	-18.3			17.5±0.1	-6.1		0.85			
	1292	107705	319.3	-38.7	9.53	M1Ve;F/E	-432.1	-85.4	-3.5 ±11.9	-7.8 ±2.9	16.3±0.4	-4.5	-8.5±10.0	0.50	3.4974	0.620	
4	1349		314.8	-63.7	6.84 (57)	G5VFe-;SpB	-243.9	-266.8			22.6±0.3	-11.4		0.80			
	1349	114790	326.4	-55.8	7.96	G7V;OtH	-129.6	-221.2	-3.9 ±5.8	10.9 ±6.4	30.7±0.8	-10.7	-7.1±1.7	0.81	3.8576	0.100	
5	1532		97.4	-71.2	9.90 (109)	K5;UnK	-152.3	-267.1			21.1±0.7	-11.1		0.60			
	1532	1539	103.8	-64.7	10.93	-;UnK	-93.1	-199.6	11.7 ±8.5	18.1 ±14.4	31.0±2.2			0.54	2.5432	0.190	
6	2072		318.4	-72.7	3.93 (13)	A5IVn;OtH	-90.2	-64.6			23.8±0.1	11.3		1.29			κ Phe
	2072	113697	346.5	-61.8	8.93	K3+v;UnK	-56.9	-102.6	3.3 ±6.1	5.9 ±5.4	28.7±2.3			0.74	6.2900	0.910	
7	3876		122.8	7.6	7.75 (70)	K0;BiN	372.6	200.1			21.6±0.2	-28.5		0.80			
	3876	7346	124.4	20.1	9.04	K2;UnK	266.0	180.6	3.8 ±7.8	-2.0 ±5.1	30.5±0.8			0.75	4.7609	0.880	
8	8497		165.5	-68.6	4.66 (22)	F3III;BiN	-58.5	-166.4			23.2±0.1	-0.9		1.51			53 χ Cet; kn: 8486
	8497	8486	165.4	-68.7	6.72	G0;F/E	-63.0	-163.8	2.7 ±4.3	-7.1 ±11.8	22.6±1.5	-5.0	4.1±1.8	0.87	0.0207	1.000	
9	10337		199.7	-70.5	9.84 (108)	K5;UnK	88.5	371.5			22.3±0.8	3.2		0.57			
	10337	6008	147.7	-74.9	10.80	M1;UnK	331.7	159.5	-9.2 ±19.1	4.4 ±16.9	23.4±1.4			0.48	6.0374	0.240	
10	10529		130.8	6.1	9.91 (110)	F2;UnK	-2.5	-5.1			20.9±2.2			1.29			
	10529	11167	138.0	-10.8	11.06	-;UnK	-0.4	-3.9	-3.6 ±12.8	4.2 ±29.4	24.8±11.5			1.59	6.7084	1.000	
	10529	26111	143.2	19.0	10.43	-;UnK	0.6	-1.4	-4.6 ±21.6	-4.1 ±21.8	33.1±2.1			0.62	6.4431	0.820	
11	12110		210.1	-66.1	8.34 (82)	K3.5Vk;UnK	6.8	88.1			21.3±0.4			0.72			
	12110	8038	190.7	-77.0	10.12	K5Ve;YnG	31.3	48.3	0.3 ±13.9	16.2 ±19.0	32.4±5.4	8.7		0.62	4.5766	0.280	
12	12158		173.9	-55.3	8.10 (77)	K0V;UnK	191.2	265.7			24.1±0.6	27.5		0.79			
	12158	11000	173.7	-60.5	9.07	K0;UnK	174.0	246.9	2.4 ±7.0	15.4 ±9.5	26.3±0.8			0.69	2.2179	0.610	
13	12444		183.5	-58.8	5.79 (39)	F6V;BiN	-24.1	-157.4			21.8±0.2	-1.0		1.12			
	12444	8486	165.4	-68.7	6.72	G0;F/E	-63.0	-163.8	-1.1 ±7.3	25.7 ±11.5	22.6±1.5	-5.0	7.3±4.0	0.87	4.7734	0.210	
14	13642		154.4	-28.3	7.52 (65)	G5;BiN	330.5	-15.3			23.5±0.5	31.8		0.84			
	13642	12926	153.1	-30.4	7.89	K1IV;OtH	280.9	-10.7	23.9 ±10.0	2.7 ±1.9	25.9±0.7	13.9	17.2±1.7	0.83	0.9988	0.340	
15	14150		156.0	-27.7	6.62 (54)	G8V;OtH	286.7	-14.3			20.6±0.2	9.5		1.01			51 Ari
	14150	19255	160.1	-10.3	7.13	G5;F/E	285.1	-49.6	-1.2 ±5.2	9.9 ±2.6	20.4±0.3	26.6	-16.0±0.1	0.83	6.4339	0.160	
16	15371		279.0	-47.2	5.24 (31)	G1V;BiN	-1334.6	639.1			12.0±0.0	11.6		0.86			ζ^{02} Ret; kn: 15330
	15371	15330	279.1	-47.2	5.53	G4V;BiN	-1343.9	638.9	5.2 ±4.6	-0.6 ±2.4	12.0±0.0	12.1	-0.6±0.2	0.86	0.0180	1.000	ζ^{01} Ret
17	17414		171.7	-29.4	9.99 (111)	K7;UnK	337.3	-116.0			17.7±0.6	37.8		0.50			kn: 17405
	17414	17405	171.7	-29.5	10.83	M1;UnK	334.6	-112.2	23.5 ±18.9	-10.8 ±7.0	16.7±0.7	22.5	15.3±14.1	0.45	0.0092	1.000	
18	18859		190.7	-36.9	5.38 (34)	F5V;BiN	293.0	-18.6			18.8±0.1	17.6		1.15			

Table 3—Continued

Indx	Pri	Cmp	ℓ	b	V	Type	μ_l	μ_b	$\Delta\mu_{\ell}^{cor}$	$\Delta\mu_{b}^{cor}$	d	v_r	Δv_{r}^{cor}	$\mathcal{M}$	$\Delta\theta d_p$	Prob	Comment
			deg	deg	mag		....	mas yr^{-1}	....		pc	.....	km s^{-1}.....	$M_{\odot}$	pc		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	18859	17414	171.7	-29.4	9.99	K7;UnK	337.3	-116.0	8.1 ±10.4	15.1 ±2.6	17.7±0.6	37.8	-28.6±10.0	0.50	5.7715	0.160	kn: 17405
	18859	17695	189.7	-41.0	11.59	M2.5V;OtH	330.4	-5.2	14.6 ±16.5	-3.9 ±4.1	16.1±0.7	0.0	17.3±10.0	0.40	1.3702	0.800	
19	19335		160.3	-10.1	5.52 (35)	F7V;YnG	260.7	-33.6			21.0±0.1	26.2		1.22			50 Per
	19335	19255	160.1	-10.3	7.13	G5;F/E	285.1	-49.6	-15.8 ±4.5	15.4 ±2.7	20.4±0.3	26.6	-0.5±0.2	0.83	0.0759	0.990	
20	19855		186.7	-30.5	6.94 (61)	G5IV;F/E	29.4	-149.6			21.1±0.3	-7.7		0.87			
	19855	16560	177.4	-37.8	11.17	K7;UnK	3.3	-96.3	0.8 ±3.7	-13.0 ±12.1	30.8±3.6			0.55	3.8779	0.120	
21	19859		186.7	-30.5	6.32 (47)	G0IV;BiN	19.1	-152.6			21.3±0.2	-7.5		1.01			kn: 19855
	19859	19855	186.7	-30.5	6.94	G5IV;F/E	29.4	-149.6	-10.1 ±1.8	-4.9 ±3.2	21.1±0.3	-7.7	0.2±0.2	0.87	0.0066	1.000	
22	23693		266.0	-36.7	4.71 (23)	F7V;OtH	-113.8	-44.9			11.6±0.0	-0.8		1.07			ζ Dor
	23693	23708	266.1	-36.7	8.98	K7Vk;UnK	-116.4	-46.5	2.8 ±2.2	1.6 ±1.9	11.7±0.1	-29.2	28.4±10.0	0.53	0.0182	1.000	
23	24608		162.6	4.6	0.08 (1)	G5IIIe;BiN	392.4	-184.3			13.1±0.1	29.5		1.22			Capella; 13 α Aur
	24608	19335	160.3	-10.1	5.52	F7V;YnG	260.7	-33.6	-3.3 ±2.4	-4.3 ±2.7	21.0±0.1	26.2	4.2±0.5	1.22	3.4113	0.200	50 Per
	24608	26779	158.4	11.9	6.21	K1V;F/E	455.9	-257.5	0.5 ±4.0	3.7 ±2.4	12.3±0.1	0.9	25.1±0.5	0.84	1.9399	1.000	kn: 26801
	24608	26801	158.4	12.0	9.78	M0.5;OtH	449.8	-256.3	0.7 ±9.1	5.6 ±4.6	12.4±0.3	1.1	24.8±1.4	0.45	1.9447	0.990	
24	24783		223.4	-29.5	9.35 (97)	K6Vk;BiN	-12.9	-148.5			19.9±0.5	29.7		0.61			
	24783	21765	206.0	-33.2	10.27	M0V...;UnK	43.9	-141.9	4.3 ±5.5	10.0 ±12.2	19.7±1.4			0.43	5.3063	0.880	
25	25278		187.2	-10.3	5.00 (25)	F8V;BiN	142.1	206.9			14.4±0.1	37.8		1.06			111 Tau
	25278	25220	187.1	-10.5	7.93	K2;BiN	139.7	209.7	6.1 ±3.1	3.5 ±4.4	14.1±0.3	37.9	-0.2±0.1	0.65	0.0493	1.000	
26	25283		243.6	-32.9	9.08 (92)	K6V;YnG	65.2	30.4			18.0±0.3	31.7		0.63			
	25283	22738	264.3	-38.6	10.73	M2;UnK	-90.4	119.0	1.5 ±4.9	-8.6 ±4.0	11.1±0.2			0.34	5.5483	0.170	
27	25647		275.3	-33.0	6.88 (58)	K0V;RoT	-142.3	32.8			15.2±0.1	29.5		0.82			
	25647	22738	264.3	-38.6	10.73	M2;UnK	-90.4	119.0	-5.8 ±14.1	-3.2 ±7.9	11.1±0.2			0.34	2.7775	0.960	
	25647	26373	254.5	-31.9	7.95	K0V;YnG	1.5	24.6	-4.4 ±24.2	-1.0 ±4.2	25.1±0.9	32.2	-1.0±5.5	0.76	4.6375	0.900	kn: 26369
	25647	31878	271.2	-25.0	9.71	K7Ve:;YnG	-75.0	-11.2	-3.8 ±5.9	-3.3 ±11.6	22.4±0.5	31.7	-1.6±11.5	0.62	2.3391	0.940	
28	26690		191.0	-8.1	8.33 (81)	F0;BiN	79.2	52.7			23.3±15.3	20.6		1.21			
	26690	26844	191.2	-7.8	10.72	K7;UnK	79.0	45.5	6.4 ±63.6	10.7 ±53.7	21.4±1.0			0.27	0.1642	1.000	
29	26779		158.4	11.9	6.21 (46)	K1V;F/E	455.9	-257.5			12.3±0.1	0.9		0.84			kn: 26801
	26779	26801	158.4	12.0	9.78	M0.5;OtH	449.8	-256.3	0.2 ±10.1	2.2 ±5.9	12.4±0.3	1.1	-0.2±1.3	0.45	0.0058	1.000	
30	27288		219.4	-20.8	3.55 (10)	A2IV-V;OtH	-16.3	-12.8			21.6±0.1	18.9		1.46			14 ζ Lep
	27288	26016	205.3	-18.2	8.60	B8;UnK	-0.0	-0.4	22.7 ±9.6	-19.2 ±6.1	23.9±11.4			3.40	5.1064	0.320	
31	27321		258.4	-30.6	3.85 (12)	A6V;OtH	-82.3	13.3			19.4±0.0	20.0		1.39			β Pic
	27321	23309	265.9	-37.4	10.02	M0Ve;YnG	-76.6	26.7	-1.0 ±4.0	-4.0 ±3.7	26.8±0.8	19.4	-0.6±10.3	0.61	3.1142	0.610	
32	27604		207.2	-14.2	9.38 (99)	F0;UnK	6.5	6.4			9.4±5.1			1.76			
	27604	28936	198.2	-4.9	9.73	F0;UnK	20.8	-12.9	11.3 ±41.4	-12.8 ±44.3	14.6±7.7			1.39	2.0996	0.620	
33	29525		199.1	-3.5	6.43 (48)	G2V;OtH	298.2	-73.6			18.0±0.1	5.7		0.87			
	29525	28267	211.0	-13.9	6.99	G0;BiN	217.5	-27.5	-4.9 ±4.0	-7.4 ±1.7	23.6±0.3	143.3	-131.6±0.1	0.86	4.9245	0.220	

Table 3—Continued

Indx	Pri	Cmp	ℓ	b	V	Type	μ_l	μ_b	$\Delta\mu_\ell^{cor}$	$\Delta\mu_b^{cor}$	d	v_r	Δv_r^{cor}	$\mathcal{M}$	$\Delta\theta d_p$	Prob	Comment
			deg	deg	mag		mas yr^{-1}				pc	km s^{-1}		$M_\odot$	pc		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
34	30314		269.4	-26.8	6.53 (50)	G1V;YnG	-66.3	-1.4			23.8±0.2	31.2		0.96			
	30314	22738	264.3	-38.6	10.73	M2;UnK	-90.4	119.0	-3.7 ±5.1	5.0 ±4.1	11.1±0.2			0.34	5.1819	0.810	
	30314	25647	275.3	-33.0	6.88	K0V;RoT	-142.3	32.8	-0.7 ±2.5	5.1 ±2.4	15.2±0.1	29.5	0.8±5.8	0.82	3.3350	0.400	
	30314	26373	254.5	-31.9	7.95	K0V;YnG	1.5	24.6	-2.3 ±2.7	1.8 ±1.7	25.1±0.9	32.2	-0.3±0.3	0.76	5.7746	0.970	kn: 26369
	30314	29964	282.7	-28.2	9.95	K4Ve;YnG	-75.9	-6.8	1.2 ±2.2	3.8 ±1.7	38.6±1.3	16.3	12.7±10.0	0.71	4.9113	0.110	
	30314	31878	271.2	-25.0	9.71	K7Ve:;YnG	-75.0	-11.2	-3.7 ±3.2	-0.9 ±2.4	22.4±0.5	31.7	-0.7±10.0	0.62	1.0193	1.000	
35	31711		271.2	-25.2	6.15 (44)	G2V;BiN	-76.0	-11.8			21.3±0.4	28.1		0.94			
	31711	26373	254.5	-31.9	7.95	K0V;YnG	1.5	24.6	-3.3 ±6.7	-1.7 ±4.0	25.1±0.9	32.2	-3.2±2.0	0.76	5.9800	0.580	kn: 26369
	31711	30314	269.4	-26.8	6.53	G1V;YnG	-66.3	-1.4	5.2 ±3.6	-1.1 ±3.7	23.8±0.2	31.2	-2.9±2.1	0.96	0.8539	0.990	
	31711	31878	271.2	-25.0	9.71	K7Ve:;YnG	-75.0	-11.2	2.6 ±4.5	-1.1 ±4.1	22.4±0.5	31.7	-3.6±10.2	0.62	0.0836	1.000	
36	34065		254.1	-16.2	5.56 (37)	G3V;BiN	-402.1	52.5			16.5±0.3	88.1		0.88			kn: 34052, 34069
	34065	34052	254.0	-16.2	8.67	K6V;BiN	-401.1	63.6	20.8 ±10.2	-13.7 ±2.0	17.4±0.4	88.0	0.1±2.5	0.66	0.0148	1.000	
37	34414		187.4	16.4	8.32 (80)	G5;OtH	212.6	-256.8			22.3±0.5	19.4		0.74			
	34414	34317	192.8	13.9	10.13	-;UnK	154.8	-160.2	-23.8 ±8.6	-16.2 ±10.3	31.9±1.7			0.64	2.2809	0.120	
38	35136		170.3	23.5	5.54 (36)	G0V;OtH	187.4	-20.2			16.9±0.1	84.9		0.95			
	35136	36704	182.0	23.8	7.68	G5V;F/E	-24.1	-44.5	11.4 ±3.7	17.5 ±1.7	19.8±0.4	-16.3	102.5±0.3	0.78	3.1520	0.110	
39	35550		196.0	15.9	3.50 (9)	F0IV;SpB	3.0	-17.8			18.5±0.2	4.1		1.57			Wasat; 55 δ Gem
	35550	28774	180.9	4.2	9.58	A0;UnK	4.2	-2.2	7.2 ±21.1	-3.4 ±17.8	25.5±7.5			2.32	6.0933	0.190	
	35550	38228	193.3	24.1	6.90	G5IV;F/E	8.8	-12.8	-4.3 ±4.0	-7.6 ±12.1	22.0±0.3	-16.5	20.3±7.3	0.88	2.7966	0.110	
40	36210		263.2	-15.6	6.72 (55)	G6.5V;OtH	-116.4	-262.8			22.7±0.2	4.3		0.90			
	36210	42697	262.5	-0.5	8.11	K2+v;BiN	-97.7	-265.9	-18.0 ±2.3	4.0 ±4.1	22.9±0.3	22.6	-25.7±0.2	0.79	6.0140	0.540	
41	36366		187.1	21.3	4.16 (17)	F0V;BiN	-123.7	210.6			18.0±0.1	-19.0		1.40			62 ρ Gem
	36366	36357	186.9	21.4	7.73	K2V;BiN	-112.7	209.1	-14.9 ±2.5	6.2 ±3.8	17.7±0.3	-4.3	-14.6±8.9	0.77	0.0661	1.000	
42	36551		204.1	15.3	8.94 (91)	K5;OtH	293.7	-50.7			20.8±0.5	66.7		0.64			
	36551	40910	209.9	26.1	9.75	K5;UnK	206.5	-182.0	-13.4 ±12.4	20.8 ±4.6	24.3±1.0	15.0	51.9±2.7	0.62	4.3838	0.110	
43	36704		182.0	23.8	7.68 (66)	G5V;F/E	-24.1	-44.5			19.8±0.4	-16.3		0.78			
	36704	37103	180.3	25.1	10.47	-;UnK	-10.4	-1.3	-8.3 ±12.1	-25.8 ±19.0	29.7±18.0			0.71	0.7040	0.130	
44	38228		193.3	24.1	6.90 (60)	G5IV;F/E	8.8	-12.8			22.0±0.3	-16.5		0.88			
	38228	37103	180.3	25.1	10.47	-;UnK	-10.4	-1.3	-6.4 ±8.2	-6.8 ±8.6	29.7±18.0			0.71	4.5320	0.220	
45	38657		202.0	22.3	7.76 (71)	K2;BiN	458.2	-85.4			20.7±0.4	-18.7		0.78			
	38657	35872	204.8	13.0	8.19	G5;OtH	421.8	-104.2	-20.6 ±10.9	0.2 ±3.2	24.0±0.5	37.2	-52.1±1.2	0.86	3.5220	0.340	
46	39780		200.8	26.0	5.30 (32)	G1IV;OtH	71.0	-1.9			23.3±0.2	-36.2		1.18			10 μ Cnc
	39780	34034	198.2	10.7	10.50	K6;UnK	38.0	-62.3	3.0 ±9.4	-0.4 ±1.6	32.7±6.0			0.29	6.3145	0.350	
	39780	37103	180.3	25.1	10.47	-;UnK	-10.4	-1.3	-18.0 ±32.3	-2.1 ±8.1	29.7±18.0			0.71	7.5085	0.520	
47	42438		150.6	35.7	5.63 (38)	G1.5Vb;F/E	-80.3	-47.1			14.4±0.1	-12.8		0.90			3 pi01 UMa
	42438	35628	148.1	27.7	8.38	K0;OtH	-74.7	-65.3	25.6 ±1.7	22.7 ±1.4	25.0±0.6	-8.8	-3.2±1.2	0.79	2.0609	0.300	

Table 3—Continued

Indx	Pri	Cmp	ℓ	b	V	Type	μ_l	μ_b	$\Delta\mu_\ell^{cor}$	$\Delta\mu_b^{cor}$	d	v_r	Δv_r^{cor}	$\mathcal{M}$	$\Delta\theta d_p$	Prob	Comment
			deg	deg	mag		.... mas yr^{-1}			....	pc	.... km s^{-1}		$M_\odot$	pc		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	42438	56199	137.4	51.7	9.98	K5;OtH	-70.9	9.9	2.9 ±3.6	-16.6 ±3.6	22.5±0.6	-15.5	3.2±10.0	0.60	4.6393	0.120	
48	42748		217.0	29.0	9.62 (102)	K7;OtH	652.6	-82.3			15.4±0.6	-3.9		0.52			
	42748	42762	217.0	29.1	11.83	M2.5;UnK	651.9	-66.1	22.4 ±46.5	-19.1 ±7.8	14.9±0.9	2.7	-6.6±14.1	0.36	0.0086	1.000	
49	42913		272.1	-7.4	1.93 (3)	A1Van:;EcB	99.4	-40.5			24.7±0.2	2.2		2.62			δ Vel
	42913	43797	273.2	-6.4	5.70	F6V;OtH	86.1	-39.8	15.3 ±1.7	-1.7 ±1.3	24.2±0.1	-5.7	8.0±1.2	1.22	0.6605	0.980	
50	46417		131.6	32.8	9.27 (96)	K5;OtH	355.8	256.4			23.0±0.5	-21.4		0.65			
	46417	48139	141.8	40.0	9.70	K5;UnK	285.7	159.1	-10.5 ±12.5	1.5 ±9.2	33.8±1.5			0.36	4.3771	0.180	
51	46843		201.2	46.1	7.05 (62)	K1Vk:;BiN	210.4	-196.1			17.8±0.2	11.2		0.84			
	46843	47201	207.6	46.0	9.43	K5;OtH	128.2	-193.0	20.4 ±6.0	21.4 ±5.5	21.9±0.7	-35.1	47.6±1.8	0.62	1.3702	0.230	
	46843	50156	213.8	53.8	10.01	K7;F/E	117.9	-181.6	1.0 ±7.5	-7.0 ±6.9	23.1±1.0	6.9	4.0±1.6	0.63	3.4719	0.510	
52	47201		207.6	46.0	9.43 (100)	K5;OtH	128.2	-193.0			21.9±0.7	-35.1		0.62			
	47201	47261	207.9	46.1	9.93	K8;OtH	88.1	-110.0	-0.3 ±5.8	-21.4 ±8.6	32.2±1.8	-1.5	-33.6±5.2	0.64	0.0953	0.850	
53	51525		170.0	56.7	8.85 (90)	K5;OtH	762.5	-310.9			15.7±0.3	20.1		0.59			
	51525	54658	167.5	64.0	10.92	M2.5;OtH	705.9	-316.1	19.9 ±32.9	25.3 ±13.6	16.9±0.7	-10.6	26.5±10.0	0.30	2.0383	0.430	
54	52708		269.9	30.2	9.37 (98)	K5Vk:;UnK	-58.6	-169.8			21.5±0.5			0.66			
	52708	55066	271.2	42.2	9.98	K5;UnK	-95.0	-189.9	22.3 ±4.1	-10.8 ±21.8	17.9±0.5	-7.8		0.52	4.5480	0.140	
55	53721		175.8	63.4	5.03 (27)	G1V;OtH	62.3	-316.1			14.1±0.0	11.1		1.02			47 UMa
	53721	53008	157.2	56.5	8.31	G5V;BiN	108.2	-162.9	-14.6 ±3.6	20.7 ±9.3	25.9±1.5	-3.2	15.3±0.6	0.79	2.8152	0.120	
	53721	54426	178.8	65.7	8.35	K0;OtH	34.4	-215.5	-7.2 ±1.8	13.1 ±4.1	22.6±0.4	-36.4	46.7±0.9	0.76	0.6437	0.730	
56	53910		149.2	54.8	2.34 (4)	A1V;VaR	-85.0	54.0			24.4±0.1	-12.0		2.67			Merak; 48 β UMa
	53910	51814	152.3	51.6	5.16	F1V;OtH	-63.1	48.3	-9.9 ±8.6	-0.8 ±6.1	26.5±0.2	-7.9	-4.8±2.2	1.44	1.5889	0.690	37 UMa
	53910	58001	140.8	61.4	2.41	A0Ve;F/E	-96.4	38.6	1.4 ±6.0	12.9 ±5.5	25.5±0.3	-12.6	2.1±1.1	2.62	3.3725	0.270	64 γ UMa
57	54952		131.9	41.9	7.68 (67)	K5;BiN	296.8	-292.3			14.6±0.1	8.1		0.71			kn: 54976
	54952	36635	147.1	28.8	10.84	M1;OtH	116.0	-176.2	7.7 ±10.7	6.9 ±10.7	25.2±1.4	-17.9	34.6±10.1	0.42	4.6029	0.130	
58	57493		145.7	63.2	9.51 (101)	K5;OtH	5.4	123.9			24.5±0.8	1.8		0.63			
	57493	53637	161.4	59.5	10.52	M0;UnK	48.0	108.1	-18.6 ±4.0	-1.7 ±7.2	27.7±1.4			0.55	3.5578	0.210	
59	59774		132.6	59.4	3.32 (6)	A3V;VaR	-108.9	-3.9			24.7±0.1	-13.4		1.63			Megrez; 69 δ UMa
	59774	59496	132.4	57.5	10.05	K5;OtH	-96.4	14.0	0.3 ±4.1	-21.2 ±3.9	28.0±1.0	-15.0	1.6±5.0	0.62	0.8379	0.560	
	59774	61100	129.0	61.8	8.08	K2V;RoT	-106.2	18.3	-4.0 ±3.6	-23.4 ±4.1	25.1±0.7	-1.3	-11.7±0.8	0.80	1.2614	0.760	
	59774	61946	125.8	61.3	8.27	K3V;F/E	-121.7	15.2	0.7 ±3.3	-27.5 ±4.3	23.4±0.4	-6.3	-6.4±1.3	0.78	1.6667	0.360	
	59774	65327	114.8	58.7	9.69	K5;OtH	-119.7	-9.3	-0.2 ±3.9	-26.6 ±4.2	24.8±0.7	-6.6	-4.6±2.5	0.61	3.9438	0.170	
	59774	65477	112.8	61.5	3.99	A5V;VaR	-119.5	-15.0	0.2 ±2.4	-19.6 ±3.8	25.1±0.1	-8.8	-2.4±0.9	1.30	4.2817	0.120	Alcor; 80 g UMa
60	61053		129.9	63.8	6.20 (45)	F9V;OtH	-51.8	-175.5			21.8±0.2	-22.1		1.04			
	61053	63894	116.9	67.5	9.26	K0;OtH	-43.1	-148.9	7.9 ±2.4	-17.2 ±5.2	22.4±0.6	-2.8	-20.0±3.1	0.62	2.4812	0.490	
61	61174		296.2	46.4	4.30 (19)	F2V;VaR	-416.1	-103.2			18.3±0.1	1.8		1.43			8 η Crv
	61174	65520	312.0	33.9	11.04	M1;UnK	-458.0	-34.5	-5.6 ±21.7	0.8 ±15.6	16.7±0.7	-30.0	25.3±5.2	0.39	5.5439	0.400	

Table 3—Continued

Indx	Pri	Cmp	ℓ	b	V	Type	μ_l	μ_b	$\Delta\mu_\ell^{cor}$	$\Delta\mu_b^{cor}$	d	v_r	Δv_r^{cor}	$\mathcal{M}$	$\Delta\theta d_p$	Prob	Comment
			deg	deg	mag		....	mas yr^{-1}	....		pc	.... km s^{-1}		$M_\odot$	pc		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
62	61317		136.1	75.3	4.24 (18)	G0V;SpB	599.4	-472.4			8.4±0.0	6.3		0.91			Chara; 8 β CVn
	61317	62207	128.8	77.8	5.95	G0V;OtH	341.2	-180.6	-21.8 ±1.9	-13.8 ±1.6	17.4±0.1	80.3	-75.5±0.1	0.83	0.4397	0.120	10 CVn
63	61901		290.9	78.0	7.91 (76)	K2;OtH	195.2	-359.6			14.2±0.1	23.7		0.64			
	61901	60759	212.6	84.6	8.24	K2V;BiN	251.1	69.8	-13.5 ±6.4	-2.5 ±3.8	27.2±0.7	-1.0	18.4±2.7	0.76	2.9909	0.210	
64	61946		125.8	61.3	8.27 (79)	K3V;F/E	-121.7	15.2			23.4±0.4	-6.3		0.78			
	61946	59496	132.4	57.5	10.05	K5;OtH	-96.4	14.0	-0.6 ±4.5	5.1 ±2.4	28.0±1.0	-15.0	7.8±5.1	0.62	2.0890	0.920	
	61946	61481	128.9	65.7	8.52	K0V;F/E	-106.9	20.8	3.5 ±3.8	1.3 ±1.9	27.0±0.7	-9.2	2.8±1.4	0.78	1.8715	0.980	
	61946	65327	114.8	58.7	9.69	K5;OtH	-119.7	-9.3	-0.2 ±4.4	1.8 ±2.4	24.8±0.7	-6.6	1.6±2.8	0.61	2.4863	1.000	
65	62229		302.1	5.5	7.82 (73)	K4V;YnG	-197.6	-134.8			20.5±0.4	15.3		0.79			
	62229	69570	316.9	12.5	8.23	G5V;OtH	-136.5	-80.9	0.9 ±4.5	-0.5 ±3.3	35.4±1.1	-24.5	32.8±0.5	0.83	5.8017	0.970	
66	62512		123.6	56.8	5.83 (40)	F5V;BiN	-108.7	3.2			24.0±1.6	-17.6		1.13			
	62512	56199	137.4	51.7	9.98	K5;OtH	-70.9	9.9	-19.4 ±9.1	-1.6 ±4.5	22.5±0.6	-15.5	-3.7±10.2	0.60	4.0091	0.210	
	62512	59496	132.4	57.5	10.05	K5;OtH	-96.4	14.0	15.7 ±7.3	1.6 ±2.3	28.0±1.0	-15.0	-3.6±5.4	0.62	2.0245	0.260	
	62512	61100	129.0	61.8	8.08	K2V;RoT	-106.2	18.3	10.6 ±7.5	6.0 ±2.7	25.1±0.7	-1.3	-16.7±2.1	0.80	2.3880	0.730	
	62512	61946	125.8	61.3	8.27	K3V;F/E	-121.7	15.2	13.5 ±7.8	4.5 ±2.6	23.4±0.4	-6.3	-11.4±2.3	0.78	1.9661	0.840	
	62512	64532	116.8	60.2	6.82	G1Va;BiN	-114.5	-0.3	2.2 ±7.0	0.9 ±2.1	25.3±0.3	-8.9	-7.9±2.0	0.91	2.0397	1.000	kn: 64523
	62512	65327	114.8	58.7	9.69	K5;OtH	-119.7	-9.3	2.6 ±7.8	2.8 ±2.5	24.8±0.7	-6.6	-9.9±3.2	0.61	2.1248	1.000	
67	65327		114.8	58.7	9.69 (104)	K5;OtH	-119.7	-9.3			24.8±0.7	-6.6		0.61			
	65327	59496	132.4	57.5	10.05	K5;OtH	-96.4	14.0	1.1 ±6.0	3.0 ±2.8	28.0±1.0	-15.0	6.2±5.6	0.62	4.0500	1.000	
68	65721		337.7	74.1	4.97 (24)	G5V;BiN	-500.1	-368.8			18.0±0.1	4.6		1.12			70 Vir; kn: 65749
	65721	66840	329.0	60.2	9.76	K5;OtH	-315.0	-330.4	-18.7 ±13.4	21.0 ±9.8	23.6±0.8	46.6	-31.5±1.2	0.61	4.4902	0.240	
69	66249		325.2	60.4	3.38 (8)	A3V;OtH	-247.4	141.0			22.7±0.1	-13.2		1.46			Heze; 79 ζ Vir
	66249	66212	325.2	60.7	7.37	K4III;BiN	-199.0	93.3	-12.6 ±7.5	27.8 ±4.4	26.6±0.9	-5.7	-7.4±1.2	1.03	0.1194	0.330	
70	68184		109.6	53.9	6.49 (49)	K3V;OtH	121.7	-182.7			10.1±0.0	-25.3		0.75			
	68184	66781	109.6	59.1	7.77	K0IV-V;OtH	42.0	-59.8	7.8 ±1.4	5.1 ±2.8	24.6±0.3	-8.0	-18.0±1.5	0.83	0.9139	0.420	
71	69701		337.7	51.1	4.07 (16)	F7IV;VaR	-236.9	-347.1			22.2±0.1	12.4		1.52			Syrma; 99 ι Vir
	69701	69962	338.2	50.2	9.10	K7V;OtH	-233.8	-356.0	-11.5 ±8.6	4.8 ±12.5	21.8±0.8	12.3	0.5±1.4	0.61	0.3689	1.000	
72	69962		338.2	50.2	9.10 (93)	K7V;OtH	-233.8	-356.0			21.8±0.8	12.3		0.61			
	69962	73457	346.6	40.5	9.49	K8Vk;VaR	-314.9	-365.3	-2.2 ±13.8	20.5 ±20.5	19.3±0.7	14.0	1.3±2.9	0.55	4.2758	0.160	
73	70529		28.8	68.5	9.77 (107)	M0;BiN	-885.9	-1046.5			16.4±0.4	13.5		0.50			kn: 70536
	70529	70536	28.8	68.4	9.98	M0.5;BiN	-887.4	-1047.0	-16.2 ±33.1	-19.8 ±39.1	16.0±0.5	5.6	7.9±2.8	0.47	0.0036	1.000	
74	72146		12.1	60.3	7.87 (75)	K0;OtH	-313.3	80.8			18.9±0.3	-10.0		0.78			
	72146	72339	353.2	50.9	8.04	K0III;OtH	-193.2	-11.9	-7.7 ±7.5	-1.5 ±3.6	31.7±1.2	-12.6	7.7±1.0	0.84	4.6628	0.240	
75	72622		340.3	38.0	2.75 (5)	kA2hA5;BiN	-125.7	2.8			23.2±0.1	-22.0		1.35			9 α^{02} Lib; kn: 72603
	72622	71743	337.5	39.2	7.24	G6V;F/E	-133.0	5.8	2.2 ±3.1	-2.8 ±1.9	23.7±0.3	-23.3	1.8±5.8	0.92	1.0114	1.000	
76	75718		354.6	37.3	6.89 (59)	K2V;SpB	-199.9	-307.8			20.6±0.6	6.6		0.85			kn: 75722

Table 3—Continued

Indx	Pri	Cmp	ℓ	b	V	Type	μ_l	μ_b	$\Delta\mu_\ell^{cor}$	$\Delta\mu_b^{cor}$	d	v_r	Δv_r^{cor}	$\mathcal{M}$	$\Delta\theta d_p$	Prob	Comment
			deg	deg	mag		mas yr^{-1}				pc	km s^{-1}		$M_\odot$	pc		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	75718	75722	354.6	37.3	7.57	K2V;BiN	-194.8	-308.5	-6.0 ±6.8	-0.7 ±10.3	20.5±0.4	7.2	-0.6±0.6	0.80	0.0052	1.000	
77	76382		64.1	53.8	6.78 (56)	K2V;BiN	111.2	444.4			22.3±0.3	-67.5		0.86			kn: 76375
	76382	76375	64.2	53.8	7.65	K3V;VaR	110.3	436.7	1.2 ±2.4	6.4 ±8.3	22.4±0.3	-68.8	1.3±1.4	0.82	0.0132	1.000	
	76382	78184	91.4	44.8	10.31	M0;UnK	303.5	186.9	6.6 ±7.6	-12.3 ±13.8	31.4±1.3			0.62	7.6971	0.180	
78	78527		90.2	44.6	4.01 (15)	F8IV;SpB	433.2	165.3			21.0±0.1	-7.0		1.54			13 θ Dra
	78527	79941	80.1	44.3	9.83	M0;UnK	259.4	137.9	1.9 ±10.3	4.4 ±4.2	32.0±1.0	-11.6	-0.7±3.5	0.66	2.6556	0.550	
79	79248		69.2	46.9	6.61 (53)	K0V;OtH	-308.9	-101.8			17.6±0.1	-11.9		0.86			14 Her
	79248	82333	62.9	39.7	9.67	M0;OtH	-266.0	-119.2	31.9 ±6.2	12.7 ±3.1	23.2±0.6	26.0	-34.6±10.1	0.62	2.6335	0.110	
80	79755		99.9	39.5	8.61 (87)	M1V;BiN	290.7	407.9			10.7±0.1	-20.7		0.51			kn: 79762
	79755	79762	99.9	39.5	10.69	M3;BiN	290.6	389.7	-1.2 ±6.0	15.9 ±8.0	10.7±0.2	-24.0	3.3±5.2	0.41	0.0033	1.000	
81	80337		341.6	7.2	5.37 (33)	G5V;YnG	52.7	-49.6			12.8±0.1	12.6		0.95			
	80337	80300	341.5	7.3	11.01	DA;UnK	55.1	-53.2	-3.6 ±2.5	4.9 ±2.5	13.2±0.4			5.67	0.0214	1.000	
82	81262		332.4	-4.3	8.78 (88)	K4Vk:;UnK	-268.9	-70.0			22.9±0.6			0.69			
	81262	76107	326.2	3.1	10.97	M0;UnK	-171.5	-73.1	-9.2 ±20.2	30.8 ±13.3	34.7±3.2			0.22	3.8308	0.120	
83	82333		62.9	39.7	9.67 (103)	M0;OtH	-266.0	-119.2			23.2±0.6	26.0		0.62			
	82333	86423	51.9	27.1	11.07	-;UnK	-187.5	-74.2	-10.0 ±21.0	-5.7 ±21.8	25.0±1.5			0.20	6.2905	0.700	
	82333	87773	59.1	25.4	10.16	K7;UnK	-223.7	-78.8	-3.9 ±12.9	19.5 ±23.1	25.4±1.1			0.66	5.9088	0.340	
84	83020		73.4	38.5	7.76 (72)	K0V;BiN	268.3	153.1			18.3±0.2	-7.2		0.78			kn: 83006
	83020	83006	73.4	38.5	7.93	K0V;BiN	263.0	138.1	12.9 ±4.4	19.3 ±2.9	17.8±0.2	-7.6	0.4±0.1	0.73	0.0100	1.000	
85	83591		15.4	20.9	7.70 (68)	K5V;BiN	-1450.0	183.2			10.7±0.1	33.6		0.64			kn: 83599
	83591	83599	15.4	20.8	10.08	M2;BiN	-1444.2	192.2	-24.3 ±32.4	-6.0 ±4.6	10.6±0.2	34.2	-0.6±0.3	0.45	0.0096	1.000	
86	83601		20.8	23.8	6.00 (43)	F8.5IV;F/E	-299.6	-150.4			20.7±0.2	-17.0		1.09			
	83601	82169	16.4	26.7	10.76	K7Vk;UnK	-217.2	-109.7	-7.9 ±15.0	-1.8 ±7.7	28.1±1.9			0.41	1.7595	0.620	
87	84405		358.3	6.9	4.33 (20)	K2V;BiN	-1201.4	-274.0			5.9±0.0	1.0		0.84			36 A Oph A; kn: 84478, 843
	84405	84478	358.4	6.8	6.33	K5V;BiN	-1196.1	-249.1	2.0 ±5.8	-22.7 ±1.7	6.0±0.0	-0.5	1.4±0.2	0.65	0.0211	1.000	kn: 84391
88	86036		91.0	32.7	5.23 (30)	G0Va;SpB	-533.5	-239.1			14.2±0.1	-14.6		0.93			26 Dra
	86036	86087	90.8	32.6	9.98	M0.5;OtH	-525.4	-234.9	-11.8 ±9.0	-7.1 ±5.8	14.1±0.2	-9.6	-4.9±1.1	0.47	0.0507	1.000	
89	86141		102.7	31.5	8.55 (85)	K4V;OtH	-50.3	-84.2			19.4±0.2	-26.6		0.67			
	86141	83988	82.3	36.3	8.85	K0;BiN	-116.0	-76.1	0.8 ±3.9	0.4 ±3.7	19.9±0.8	3.3	-28.2±1.3	0.65	5.9573	1.000	kn: 83996
	86141	83996	82.3	36.3	9.34	K8;BiN	-110.8	-80.9	-2.4 ±5.1	6.4 ±6.8	20.2±1.6	1.9	-26.8±1.2	0.62	5.9586	0.930	
90	87579		46.5	21.9	8.50 (84)	K0;OtH	26.5	87.4			24.4±0.6	-12.7		0.76			
	87579	87745	29.9	14.2	10.12	K5;UnK	-13.2	83.9	1.0 ±3.2	-16.7 ±5.0	26.2±1.3	-34.4	20.2±10.0	0.46	7.4713	0.110	
91	88745		57.0	22.3	5.05 (28)	F7V;BiN	76.8	-99.5			15.6±0.1	1.7		0.91			99 b Her
	88745	88945	56.5	21.6	6.84	G0;OtH	80.0	-47.1	-31.4 ±1.8	-15.3 ±1.9	24.8±0.3	-15.0	16.7±0.3	0.92	0.2159	0.220	
92	90368		75.0	23.5	9.76 (106)	F8;UnK	-0.7	26.9			19.6±4.0			0.95			
	90368	86916	73.5	30.3	10.69	M0;UnK	15.5	24.8	-18.8 ±3.6	11.1 ±14.2	21.5±0.5	18.0		0.70	2.3878	0.880	

Table 3—Continued

Indx	Pri	Cmp	ℓ	b	V	Type	μ_l	μ_b	$\Delta\mu_\ell^{cor}$	$\Delta\mu_b^{cor}$	d	v_r	Δv_r^{cor}	$\mathcal{M}$	$\Delta\theta d_p$	Prob	Comment
			deg	deg	mag		mas yr^{-1}				pc	km s^{-1}		$M_\odot$	pc		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
93	92311		48.3	8.4	9.17 (94)	K7;OtH	-558.5	181.0			17.0±0.4	-19.7		0.61			
	92311	95890	56.5	1.7	9.98	K5;OtH	-278.9	92.8	-6.8 ±17.7	-7.6 ±6.3	30.6±1.6	12.8	-40.3±2.9	0.62	3.1427	0.150	
94	95501		39.6	-6.1	3.36 (7)	F0IV;BiN	191.2	-187.4			15.5±0.2	-30.1		1.58			30 δ Aql
	95501	97051	47.9	-6.7	10.00	M0;OtH	177.9	-114.3	-9.3 ±6.3	-11.9 ±6.2	23.1±0.9	-7.0	-20.6±2.5	0.62	2.2417	0.620	
95	96895		83.3	13.2	5.99 (42)	G1.5Vb;BiN	-208.3	60.2			21.1±0.1	-27.5		1.02			16 c Cyg A; kn: 96901
	96895	96901	83.3	13.2	6.25	G3V;BiN	-205.1	44.1	-2.0 ±2.3	15.6 ±1.6	21.2±0.1	-28.1	0.6±0.1	0.97	0.0040	1.000	16 c Cyg B
96	97295		68.8	4.4	5.00 (26)	F7V;BiN	-378.5	-244.3			21.2±0.1	3.7		1.23			17 Cyg
	97295	97222	68.6	4.5	7.68	K3V;BiN	-377.6	-237.8	-2.7 ±7.4	-8.0 ±5.2	21.1±0.4	6.0	-2.2±1.3	0.77	0.0815	1.000	
97	98106		322.7	-30.7	8.40 (83)	K3+v;UnK	-296.6	46.8			23.6±0.4			0.75			
	98106	98764	321.0	-31.0	9.56	K2.5Vk;UnK	-213.3	34.0	21.3 ±10.0	-0.8 ±3.0	36.3±1.6			0.74	0.6119	0.740	
98	99452		56.7	-9.4	7.34 (64)	K1V;BiN	119.0	561.3			20.4±0.3	-49.0		0.83			
	99452	94557	52.7	3.8	11.56	M3.5;UnK	97.6	742.1	-0.8 ±7.8	-33.9 ±33.8	19.1±1.1			0.41	4.9093	0.250	
99	102409		12.7	-36.8	8.81 (89)	M1Ve;BiN	-293.0	-348.5			9.9±0.1	-4.5		0.45			kn: 102141
	102409	102141	11.1	-36.3	10.27	M4.5;BiN	-284.5	-325.9	6.1 ±11.8	8.0 ±13.7	10.7±0.4	-4.0	-0.3±2.8	0.36	0.2248	1.000	
100	106231		74.3	-20.1	9.23 (95)	K5-K7V;F/E	-12.1	-197.1			24.8±0.7	-21.0		0.65			
	106231	110526	90.0	-20.8	10.70	M3V;BiN	90.2	-316.6	-6.9 ±8.6	1.1 ±32.8	15.5±1.6	-19.4	-0.7±3.2	0.34	6.3754	0.280	
101	106696		346.4	-46.4	7.14 (63)	K1V;YnG	-294.2	-364.1			14.6±0.1	27.0		0.76			
	106696	98681	348.8	-31.6	9.92	K1IV;UnK	-250.4	-442.2	-25.9 ±100.8	11.9 ±123.2	15.6±5.5			0.41	3.8110	0.220	
102	107310		80.6	-18.3	4.49 (21)	F6V;BiN	30.7	-372.9			22.2±0.2	16.2		1.39			78 μ^{01} Cyg; kn: 107326
	107310	106972	79.1	-18.5	11.62	M1.5;UnK	41.2	-361.9	-12.5 ±4.1	22.6 ±25.7	24.4±1.8	6.7	9.5±10.0	0.40	0.5691	0.720	
103	108156		84.9	-17.2	7.73 (69)	K0V;F/E	7.8	-313.3			20.0±0.3	-15.4		0.79			
	108156	106407	87.4	-8.0	7.78	K2;UnK	6.7	-194.3	6.2 ±1.5	-1.7 ±5.2	28.8±0.4	-10.9	-9.0±1.5	0.84	3.3205	0.180	
104	109176		82.3	-24.3	3.77 (11)	F5V;SpB	245.0	-170.6			11.7±0.1	-14.8		1.29			24 ι Peg
	109176	108706	83.3	-21.2	11.99	M4;F/E	309.9	-212.8	19.9 ±10.9	9.4 ±19.1	8.9±0.2	-4.0	-11.1±18.2	0.26	0.6613	0.490	
105	111960		20.1	-61.2	7.83 (74)	K5V;OtH	2.1	-383.4			13.6±0.1	1.0		0.64			
	111960	117542	19.8	-76.3	7.88	K0V;BiN	0.0	-185.1	0.2 ±1.4	-10.0 ±9.1	25.4±0.6	10.5	-3.1±1.8	0.82	3.5737	0.350	
106	113368		20.5	-64.9	1.17 (2)	A4V;BiN	-157.2	-332.6			7.7±0.0	6.1		1.36			Fomalhaut; 24 α PsA
	113368	113283	15.9	-64.6	6.48	K4V;F/E	-172.4	-326.3	-4.7 ±1.8	0.8 ±2.6	7.6±0.0	6.6	-0.4±0.7	0.67	0.2638	1.000	
107	114378		89.2	-41.7	6.54 (51)	G0V;BiN	-147.9	-10.8			24.8±0.3	-5.0		0.97			
	114378	112523	86.7	-34.8	10.39	K5;UnK	-105.2	-1.1	2.9 ±8.4	-0.1 ±4.2	36.3±2.9			0.33	3.1198	0.860	
108	114996		324.3	-54.8	3.99 (14)	F1III;BiN	69.2	-45.4			23.1±0.3	18.4		1.55			γ Tuc
	114996	117815	312.1	-50.1	6.64	G0V;BiN	68.9	-65.8	3.5 ±2.0	1.6 ±1.8	25.6±0.3	22.1	-5.3±0.7	1.00	3.5335	0.950	
109	115126		60.7	-64.5	5.20 (29)	G6/G8I;SpB	119.4	-243.5			21.1±1.1	10.8		0.97			94 Aqr
	115126	113552	58.5	-59.4	10.57	K7;VaR	70.2	-220.3	22.5 ±7.8	9.8 ±15.4	25.7±1.3	-49.8	58.2±11.2	0.52	1.8911	0.380	
110	116215		58.4	-69.1	8.59 (86)	K6V;BiN	2.8	-407.0			15.2±0.5	-1.3		0.61			kn: 116191
	116215	116003	48.5	-70.3	11.09	M2Ve;F/E	-63.6	-369.0	4.3 ±5.2	-7.4 ±24.5	16.2±0.9	-5.7	5.1±10.0	0.41	0.9518	1.000	

Table 3—Continued

Indx	Pri	Cmp	ℓ	b	V	Type	μ_l	μ_b	$\Delta\mu_\ell^{cor}$	$\Delta\mu_b^{cor}$	d	v_r	Δv_r^{cor}	$\mathcal{M}$	$\Delta\theta d_p$	Prob	Comment
			deg	deg	mag		…………mas yr^{-1}…………				pc	… km s^{-1} …		$M_\odot$	pc		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
111	117226		115.0	-1.4	9.75 (105)	M3;UnK	5.6	-3.1			18.2±15.1			0.09			
	117226	10529	130.8	6.1	9.91	F2;UnK	-2.5	-5.1	8.2 ±32.1	2.7 ±15.0	20.9±2.2			1.29	5.5531	0.760	
	117226	109335	108.4	9.5	10.11	A0;UnK	-11.3	-11.0	14.5 ±13.7	9.7 ±22.1	29.4±7.6			1.36	4.0321	0.100	

Table 4. Candidate Companions for 265 Candidate Primaries between 25 and 50 pc.

Indx	Pri	Cmp	ℓ	b	V	Type	μ_l	μ_b	$\Delta\mu_\ell^{cor}$	$\Delta\mu_b^{cor}$	d	v_r	Δv_r^{cor}	$\mathcal{M}$	$\Delta\theta d_p$	Prob	Comment
			deg	deg	mag		.... mas yr^{-1}			....	pc	.... km s^{-1}		$M_\odot$	pc		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
112	493		108.0	-43.3	7.45 (149)	F8;BiN	-181.3	-110.5			37.1±0.8	-45.6		0.94			
	493	495	108.0	-43.5	8.58	K0;BiN	-176.7	-106.3	-4.9 ±1.9	-4.8 ±1.9	37.1±1.7	-44.7	-0.8±1.0	0.83	0.1032	1.000	
113	1481		309.1	-53.3	7.46 (150)	F8V;OtH	-100.2	38.1			41.5±0.9	6.6		0.98			
	1481	1910	308.4	-54.7	11.33	M0Ve;BiN	-92.8	39.0	-6.9 ±7.0	0.8 ±6.5	53.0±7.6	6.6	-0.1±10.0	0.53	1.0501	0.120	
	1481	1993	308.4	-55.3	11.26	M0Ve;VaR	-96.6	40.9	-3.0 ±2.5	-0.7 ±2.7	45.8±5.1	6.4	0.1±10.0	0.57	1.5338	0.930	
	1481	2729	306.3	-55.1	9.56	K4Ve;YnG	-93.1	40.3	-4.6 ±2.2	2.7 ±2.1	43.9±1.9	5.7	1.2±10.0	0.75	1.7730	0.900	
114	2484		306.8	-54.0	4.36 (22)	B9V;BiN	-90.6	44.9			41.4±0.3	14.0		3.08			β^{01} Tuc; kn: 2487
	2484	1481	309.1	-53.3	7.46	F8V;OtH	-100.2	38.1	6.6 ±1.6	2.9 ±1.6	41.5±0.9	6.6	7.1±2.5	0.98	1.1312	0.960	
	2484	1910	308.4	-54.7	11.33	M0Ve;BiN	-92.8	39.0	-0.0 ±6.9	4.5 ±6.5	53.0±7.6	6.6	7.0±10.3	0.53	0.8315	0.100	
	2484	1993	308.4	-55.3	11.26	M0Ve;VaR	-96.6	40.9	3.8 ±2.3	3.5 ±2.5	45.8±5.1	6.4	7.1±10.3	0.57	1.1710	0.560	
	2484	2578	306.5	-54.0	5.07	A0V;BiN	-92.8	40.4	2.5 ±1.3	4.8 ±1.2	45.6±0.4	5.0	9.1±2.8	2.64	0.1108	1.000	β^{03} Tuc
	2484	2729	306.3	-55.1	9.56	K4Ve;YnG	-93.1	40.3	3.1 ±2.0	6.5 ±1.9	43.9±1.9	5.7	8.2±10.3	0.75	0.8023	0.940	
115	2533		110.2	-67.6	8.54 (213)	K0V;BiN	289.2	-79.7			46.1±2.9	-10.6		0.86			
	2533	118146	88.1	-66.3	9.97	K0;UnK	225.1	-165.0	8.1 ±2.3	-7.1 ±2.0	46.9±3.8			0.75	7.0150	0.250	
116	2578		306.5	-54.0	5.07 (32)	A0V;BiN	-92.8	40.4			45.6±0.4	5.0		2.64			β^{03} Tuc
	2578	1481	309.1	-53.3	7.46	F8V;OtH	-100.2	38.1	5.5 ±1.6	-1.3 ±1.5	41.5±0.9	6.6	-2.0±1.2	0.98	1.3270	0.320	
	2578	1910	308.4	-54.7	11.33	M0Ve;BiN	-92.8	39.0	-1.5 ±6.9	-0.9 ±6.5	53.0±7.6	6.6	-2.1±10.1	0.53	1.0341	0.770	
	2578	1993	308.4	-55.3	11.26	M0Ve;VaR	-96.6	40.9	2.4 ±2.3	-2.5 ±2.5	45.8±5.1	6.4	-2.0±10.1	0.57	1.3915	1.000	
	2578	2729	306.3	-55.1	9.56	K4Ve;YnG	-93.1	40.3	0.5 ±2.0	0.8 ±1.9	43.9±1.9	5.7	-0.8±10.1	0.75	0.9080	1.000	
117	2729		306.3	-55.1	9.56 (258)	K4Ve;YnG	-93.1	40.3			43.9±1.9	5.7		0.75			
	2729	1910	308.4	-54.7	11.33	M0Ve;BiN	-92.8	39.0	-2.0 ±7.2	-1.7 ±6.7	53.0±7.6	6.6	-1.2±14.1	0.53	0.9835	0.990	
	2729	1993	308.4	-55.3	11.26	M0Ve;VaR	-96.6	40.9	1.8 ±3.0	-3.3 ±2.9	45.8±5.1	6.4	-1.1±14.1	0.57	0.9258	1.000	
118	2888		309.4	-67.8	6.79 (108)	G2IV;SpB	-402.0	71.4			43.7±0.9	-1.9		1.15			kn: 2848
	2888	2848	309.6	-67.8	8.40	G8IV;BiN	-400.8	67.4	-1.5 ±1.4	2.4 ±1.4	44.2±2.0	-4.6	2.6±4.6	0.90	0.0699	1.000	
	2888	118130	329.1	-68.5	11.23	K5;UnK	-404.6	-57.1	5.1 ±2.5	-1.4 ±2.5	40.4±5.0			0.31	5.6028	0.450	
119	4120		123.5	-53.1	8.50 (207)	K0;UnK	-31.8	-48.8			47.8±2.8			0.85			
	4120	3161	118.1	-55.0	11.49	-;UnK	-42.1	-66.7	8.4 ±5.0	21.4 ±4.3	47.5±6.2			0.63	3.0860	0.170	
120	5534		130.9	-53.0	7.23 (138)	G0;BiN	64.7	246.5			39.6±1.0	8.9		1.01			
	5534	6454	136.5	-54.6	7.30	G5;SpB	44.4	244.5	-1.9 ±1.4	7.4 ±1.4	45.2±1.1	18.4	-10.2±0.2	0.94	2.5362	0.260	
121	5881		128.2	-24.9	8.87 (234)	G5;SpB	-5.6	-40.6			47.7±3.4	-17.1		1.02			
	5881	6278	129.2	-24.2	10.62	K5;UnK	16.9	-45.9	-20.9 ±3.2	6.2 ±3.2	46.6±5.4			0.64	0.9586	0.980	
122	6485		294.6	-59.1	8.53 (212)	G7V;YnG	-78.8	57.0			49.5±2.0	8.3		0.85			
	6485	1910	308.4	-54.7	11.33	M0Ve;BiN	-92.8	39.0	0.2 ±7.0	-1.9 ±6.5	53.0±7.6	6.6	-0.1±10.0	0.53	7.5812	0.590	
	6485	2729	306.3	-55.1	9.56	K4Ve;YnG	-93.1	40.3	2.3 ±2.2	-0.2 ±2.1	43.9±1.9	5.7	1.2±10.0	0.75	6.5158	0.420	
	6485	9892	279.7	-60.4	8.64	G7V;YnG	-55.3	67.6	-3.7 ±2.3	5.8 ±2.3	50.9±1.7	9.5	0.6±0.5	0.84	6.5357	0.240	
123	6494		300.5	-40.4	8.37 (197)	G6V;YnG	-95.9	37.0			46.5±1.3	12.2		0.87			

Table 4—Continued

Indx	Pri	Cmp	ℓ	b	V	Type	μ_l	μ_b	$\Delta\mu_\ell^{cor}$	$\Delta\mu_b^{cor}$	d	v_r	Δv_r^{cor}	$\mathcal{M}$	$\Delta\theta d_p$	Prob	Comment
			deg	deg	mag		. . . .	mas yr^{-1}	. . . .		pc	. . . . km s^{-1}	. . . .	$M_\odot$	pc		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	6494	1113	306.3	-42.2	8.76	G8V;BiN	-90.1	28.0	-11.9 ±2.4	4.1 ±2.4	44.4±1.6	8.8	1.5±0.3	0.81	3.8087	0.330	
124	6856		290.4	-63.6	9.35 (254)	K1V;YnG	-84.5	75.0			36.0±1.3	7.1		0.76			
	6856	3556	305.2	-65.5	11.91	M1.5;UnK	-98.9	53.5	-4.7 ±2.3	0.6 ±2.3	40.4±4.3	-1.6	6.5±10.0	0.44	4.1623	0.620	
125	6975		134.2	-38.3	7.62 (157)	F8;OtH	-39.1	-57.6			48.4±1.9	-50.8		0.92			
	6975	8522	139.1	-35.3	8.56	G8V;OtH	-37.6	-40.7	16.8 ±1.5	-6.5 ±1.4	51.8±2.9	-3.5	-48.4±1.2	0.90	4.2258	0.150	
126	7244		135.1	-37.9	7.63 (158)	G0;OtH	-5.8	27.8			34.7±0.6	10.9		0.89			
	7244	8356	137.6	-32.8	10.39	-;UnK	-1.5	4.4	-7.5 ±2.0	17.2 ±1.9	29.4±17.6			1.83	3.3515	0.440	
127	7276		151.4	-67.5	5.75 (50)	G2IV;OtH	194.8	1.4			29.5±0.2	-15.3		1.24			
	7276	7576	153.3	-66.9	7.66	G5V;F/E	197.5	-9.2	-1.5 ±1.7	17.9 ±1.6	24.0±0.4	11.1	-26.0±0.1	0.86	0.5142	0.350	
128	7387		292.0	-58.1	6.03 (64)	F2V;VaR	-257.9	122.8			40.2±0.4	1.0		1.41			
	7387	8687	285.5	-60.1	11.48	-;UnK	-242.1	145.7	-2.0 ±4.6	1.9 ±3.8	47.9±7.7			0.53	2.7386	0.900	
129	7580		156.7	-69.2	6.24 (74)	F8.5VF;SpB	177.1	210.6			40.4±1.5	47.5		1.20			
	7580	7759	158.9	-69.4	7.85	F8;OtH	154.3	205.4	11.7 ±1.9	12.2 ±1.7	49.1±2.0	12.9	34.9±0.5	1.03	0.5636	0.130	
130	7699		289.9	-59.5	7.08 (127)	F5V;UnK	-73.8	62.5			47.6±1.1			1.20			
	7699	6485	294.6	-59.1	8.53	G7V;YnG	-78.8	57.0	-0.4 ±2.4	-0.0 ±1.7	49.5±2.0	8.3		0.85	1.9869	1.000	
131	8233		217.1	-77.9	6.38 (80)	F2Vn;OtH	49.4	95.3			43.5±0.9	5.0		1.37			
	8233	9141	197.4	-74.0	8.07	G4V;YnG	84.0	76.7	-4.4 ±2.4	-4.8 ±2.6	40.9±1.1	5.7	-0.7±5.2	0.86	4.6088	0.120	
132	9487		155.4	-55.6	3.82 (13)	A2;BiN	42.0	10.3			46.2±2.3	7.5		2.71			α Psc B
	9487	9519	155.5	-55.5	8.18	F8;UnK	40.0	10.1	2.0 ±2.6	0.2 ±2.6	51.0±2.5			0.94	0.0905	1.000	
133	9685		282.3	-59.2	6.45 (86)	F4V;OtH	-62.1	70.5			47.8±1.0	3.4		1.38			
	9685	6485	294.6	-59.1	8.53	G7V;YnG	-78.8	57.0	3.6 ±2.5	0.7 ±1.8	49.5±2.0	8.3	-6.6±3.7	0.85	5.2427	0.240	
	9685	7699	289.9	-59.5	7.08	F5V;UnK	-73.8	62.5	3.1 ±2.0	0.4 ±1.7	47.6±1.1			1.20	3.2574	0.960	
	9685	9892	279.7	-60.4	8.64	G7V;YnG	-55.3	67.6	-3.7 ±2.4	5.5 ±2.4	50.9±1.7	9.5	-6.1±3.7	0.84	1.4412	0.770	
134	9727		127.1	15.0	5.27 (38)	F0Vn;BiN	134.9	-21.9			33.2±0.5	-20.3		1.49			47 Cas
	9727	22152	135.1	19.7	6.46	F7V;OtH	153.6	-19.9	-3.4 ±3.8	1.9 ±2.9	32.3±0.4	-5.7	-11.9±4.0	1.14	5.1680	0.380	
135	9774		207.7	-73.1	8.55 (214)	K1V;BiN	146.5	391.3			46.6±3.1	24.0		0.85			kn: 9769
	9774	9769	207.7	-73.1	8.95	G9V;OtH	152.2	389.4	-5.7 ±2.1	1.9 ±2.6	43.8±2.4	45.0	-21.0±3.5	0.84	0.0128	1.000	
136	10321		139.2	-19.6	7.19 (135)	G0V;F/E	86.4	-75.0			26.8±0.4	6.4		0.85			
	10321	10339	139.3	-19.7	7.35	G0V;F/E	86.2	-72.0	0.1 ±1.6	-2.8 ±1.6	26.2±0.4	7.0	-0.6±0.4	0.85	0.0801	1.000	
137	10602		275.4	-60.8	3.56 (10)	B8IV-V;BiN	-53.4	79.2			47.1±0.3	10.4		4.06			ϕ Eri
	10602	6485	294.6	-59.1	8.53	G7V;YnG	-78.8	57.0	-1.9 ±1.8	1.3 ±1.6	49.5±2.0	8.3	0.0±1.3	0.85	8.0013	0.520	
	10602	7699	289.9	-59.5	7.08	F5V;UnK	-73.8	62.5	-1.1 ±1.6	1.4 ±1.4	47.6±1.1			1.20	6.0570	0.900	
	10602	9685	282.3	-59.2	6.45	F4V;OtH	-62.1	70.5	-2.0 ±1.6	1.3 ±1.6	47.8±1.0	3.4	6.7±3.9	1.38	3.1359	0.920	
	10602	12225	272.3	-57.8	5.30	A6V;OtH	-52.9	81.2	4.4 ±1.3	-2.2 ±1.3	45.6±2.3	-3.0	14.6±5.2	1.83	2.7756	0.250	η Hor
138	11258		283.8	-53.2	5.36 (41)	F2III;OtH	134.4	63.5			49.4±0.4	6.0		1.67			λHor
	11258	10611	273.8	-61.6	9.04	G5V;UnK	144.1	42.1	-0.2 ±3.5	3.1 ±4.6	59.3±3.5			0.88	8.5777	0.110	

Table 4—Continued

Indx	Pri	Cmp	ℓ	b	V	Type	μ_l	μ_b	$\Delta\mu_\ell^{cor}$	$\Delta\mu_b^{cor}$	d	v_r	Δv_r^{cor}	$\mathcal{M}$	$\Delta\theta d_p$	Prob	Comment
			deg	deg	mag		....	....	mas yr^{-1}		pc	.... km s^{-1}		$M_\odot$	pc		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
139	11359		209.6	-68.4	8.65 (221)	G5V;UnK	173.0	-107.8			48.3±2.2			0.87			
	11359	11433	219.9	-68.7	9.10	K1V;OtH	204.0	-84.5	-19.0 ±3.6	6.9 ±2.3	40.5±1.9	-4.6		0.87	3.1677	0.620	
140	11477		236.7	-68.2	5.13 (34)	A2V;OtH	-8.9	17.8			46.6±0.6	19.0		1.53			ϕ For
	11477	11448	236.9	-68.3	7.59	F7V;OtH	-9.0	18.6	-0.1 ±1.6	-0.7 ±1.6	51.2±1.8	12.3	6.7±2.5	1.07	0.0884	1.000	
141	11783		191.1	-63.8	4.74 (25)	F5V;BiN	65.7	-124.3			26.7±0.2	-27.4		1.38			76 σ Cet
	11783	11759	191.1	-63.9	8.67	K2.5Vk;UnK	63.4	-124.1	2.1 ±1.5	-0.6 ±1.4	27.9±0.7			0.78	0.0447	1.000	
142	12189		151.5	-32.3	6.48 (88)	F6III;SpB	126.8	49.9			41.8±1.0	14.4		1.32			30 Ari B; kn: 12184
	12189	12184	151.5	-32.3	7.10	F4V;BiN	132.3	54.8	-5.5 ±1.3	-4.9 ±1.2	40.8±1.1	17.2	-2.8±2.1	1.23	0.0078	1.000	30 Ari A
143	12225		272.3	-57.8	5.30 (39)	A6V;OtH	-52.9	81.2			45.6±2.3	-3.0		1.83			η Hor
	12225	9685	282.3	-59.2	6.45	F4V;OtH	-62.1	70.5	-0.6 ±2.7	1.7 ±1.7	47.8±1.0	3.4	-7.9±6.2	1.38	4.2822	0.940	
	12225	9892	279.7	-60.4	8.64	G7V;YnG	-55.3	67.6	-5.1 ±2.7	6.5 ±2.4	50.9±1.7	9.5	-14.1±5.0	0.84	3.6480	0.350	
144	12413		255.7	-63.0	4.74 (26)	A1Vb;BiN	-26.1	102.9			35.7±2.8	18.0		1.60			s Eri
	12413	14913	253.8	-57.0	5.92	F7III+;BiN	-25.0	88.7	3.5 ±1.3	3.1 ±2.2	42.5±1.1	17.0	2.8±7.8	1.38	3.7956	0.120	
145	12685		137.2	-1.5	8.28 (193)	G0;BiN	-21.0	-5.8			49.0±2.2	3.5		0.88			
	12685	10332	133.6	-3.1	11.42	F5;BiN	-8.4	1.7	-11.6 ±3.1	-7.0 ±3.1	49.3±22.9	-41.5	45.3±1.6	9.51	3.3670	0.980	
146	12862		168.1	-47.9	6.04 (67)	F0III:;OtH	79.6	12.5			49.1±1.0	20.2		1.55			
	12862	12925	167.5	-47.1	7.88	F8;BiN	85.9	12.4	-5.7 ±1.4	-1.7 ±1.4	54.3±3.1	4.6	15.5±3.1	1.08	0.7786	0.400	
147	13027		157.2	-35.7	6.90 (115)	G0;BiN	182.3	-73.9			33.6±0.9	3.7		0.94			
	13027	10272	145.7	-35.3	7.71	K1III-;BiN	181.0	-99.5	-7.2 ±3.4	4.8 ±3.5	36.6±1.6	-0.3	-0.7±0.4	0.86	5.4895	0.130	
148	13394		136.0	3.6	6.78 (107)	G0;OtH	210.2	-20.6			30.5±0.4	-10.1		1.02			
	13394	8865	130.8	-2.4	9.70	K5V;UnK	205.1	-28.1	-1.9 ±2.7	-0.4 ±2.7	37.8±2.5			0.71	4.2287	0.870	
149	13411		229.8	-63.3	8.51 (208)	G3V;OtH	-106.8	173.6			49.6±2.8	20.0		0.91			
	13411	14989	214.6	-57.9	10.15	K2;UnK	-46.8	183.6	-5.5 ±2.3	-0.7 ±2.6	54.0±4.7			0.76	7.9502	0.120	
150	13806		153.3	-25.7	8.92 (238)	G5;ClN	184.8	59.4			39.2±1.6	24.4		0.81			
	13806	15300	159.3	-26.1	11.11	M0;BiN	178.3	77.3	-9.7 ±2.7	-8.8 ±2.6	39.1±5.1	29.8	-2.4±1.2	0.51	3.7377	0.510	
151	13834		158.9	-33.2	5.80 (53)	F5IV;OtH	212.6	104.5			33.2±0.3	27.0		1.37			47 Ari
	13834	15720	159.8	-24.7	11.03	M0V;UnK	212.5	77.1	-3.2 ±2.2	2.2 ±2.3	32.3±2.9	8.1	21.5±10.0	0.49	4.9487	0.710	
152	14913		253.8	-57.0	5.92 (56)	F7III+;BiN	-25.0	88.7			42.5±1.1	17.0		1.38			
	14913	16853	260.3	-51.2	7.62	G2V;BiN	-29.2	81.5	-9.2 ±2.6	-4.6 ±4.0	43.3±1.4	14.4	3.9±7.4	0.96	5.1323	0.570	
153	14976		154.4	-21.2	8.15 (186)	G5V;BiN	187.6	48.8			39.5±1.5	27.2		0.89			
	14976	13806	153.3	-25.7	8.92	G5;ClN	184.8	59.4	5.7 ±1.7	-1.0 ±1.7	39.2±1.6	24.4	1.4±1.2	0.81	3.1702	0.840	
154	15197		191.6	-51.3	4.80 (27)	kA4hA9;SpB	-39.9	21.5			33.6±0.3	-5.8		1.58			Zibal; 13 ζ Eri
	15197	15244	192.2	-51.3	6.14	F5VFe-;BiN	-39.1	22.7	-0.7 ±1.0	-1.6 ±1.0	34.2±0.8	-5.3	-0.5±3.1	1.30	0.2256	1.000	14 Eri
155	15304		173.7	-40.4	7.38 (147)	F8V;BiN	124.6	111.7			46.1±2.0	31.3		1.10			kn: 15310
	15304	15310	173.7	-40.4	7.78	G0;BiN	128.3	112.0	-3.7 ±1.9	-0.5 ±1.9	41.8±2.1	31.5	-0.2±0.3	1.17	0.0349	1.000	
156	15323		156.3	-22.1	6.40 (82)	G0;OtH	-51.4	-104.9			26.7±0.4	5.9		1.04			

Table 4—Continued

Indx	Pri	Cmp	ℓ	b	V	Type	μ_l	μ_b	$\Delta\mu_\ell^{cor}$	$\Delta\mu_b^{cor}$	d	v_r	Δv_r^{cor}	$\mathcal{M}$	$\Delta\theta d_p$	Prob	Comment
			deg	deg	mag		............mas yr^{-1}............				pc	....km s^{-1}....		$M_\odot$	pc		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	15323	16090	160.6	-23.9	11.78	M0.5V;UnK	-43.1	-106.8	-8.5 ±4.3	1.9 ±4.1	30.1±3.5			0.45	1.9949	0.330	
157	15527		224.8	-57.3	7.36 (146)	G1.5V;BiN	102.3	340.0			35.5±0.8	39.5		0.90			kn: 15526
	15527	15526	224.7	-57.3	8.48	G9.5V;BiN	104.1	339.2	-0.9 ±2.5	0.6 ±2.8	35.4±1.4	39.6	-0.1±0.3	0.84	0.0436	1.000	
158	15648		149.8	-11.6	4.96 (30)	A3V;VaR	-51.6	-34.0			46.2±0.7	-9.0		2.58			32 l Per
	15648	17217	151.2	-7.4	7.93	F8;BiN	-43.4	-26.5	-7.0 ±1.4	-4.6 ±1.7	50.4±3.1	-12.9	3.1±3.9	0.93	3.5140	0.200	
159	17027		192.3	-44.7	5.97 (60)	K1V;OtH	165.9	-125.5			33.7±0.4	40.3		1.04			21 Eri
	17027	15776	191.8	-49.2	6.20	G2V;BiN	183.8	-119.2	-17.1 ±1.5	12.6 ±1.4	37.1±0.7	41.3	0.3±0.2	0.95	2.6267	0.120	
160	17118		140.2	6.8	6.81 (110)	F5;BiN	191.2	-35.2			42.5±0.9	16.7		1.11			kn: 17126
	17118	17126	140.3	6.8	8.21	G5;BiN	193.0	-38.2	-1.8 ±2.2	2.9 ±2.1	40.7±1.7	17.6	-0.9±1.3	0.86	0.0094	1.000	
161	17184		296.3	-33.0	8.65 (222)	G6V;BiN	-240.1	-54.5			49.5±2.6	-28.5		0.85			
	17184	15803	296.5	-33.9	11.96	-;UnK	-230.9	-38.4	-9.0 ±3.4	-18.1 ±3.5	49.1±6.4			0.14	0.7137	0.950	
162	17298		253.7	-51.5	6.50 (90)	F7V;BiN	2.8	-74.6			40.3±0.7	40.8		1.10			
	17298	17255	262.0	-49.9	9.03	K3.5Vk;SpB	-10.0	-77.9	2.0 ±6.2	-2.9 ±2.7	36.4±0.9	40.0	0.3±13.6	0.74	3.8484	0.300	
163	17395		199.1	-46.3	5.59 (47)	A5m;BiN	15.9	-14.0			42.4±0.9	15.4		1.36			
	17395	16348	209.7	-52.8	7.45	G5V;SpB	5.6	-2.6	2.1 ±1.6	-0.8 ±1.6	44.4±1.7	-6.6	22.5±0.8	0.92	7.0162	0.580	
164	17950		189.8	-40.1	6.47 (87)	F2;BiN	38.8	99.4			43.7±1.5	30.9		1.28			
	17950	16933	188.5	-43.2	9.63	K2V;UnK	50.4	104.9	-7.5 ±1.9	1.8 ±1.9	43.2±3.7			0.77	2.4719	0.970	
165	19206		202.2	-41.0	6.88 (113)	G0;SpB	73.4	-180.0			40.8±1.4	-10.2		1.05			
	19206	21489	211.8	-36.4	9.98	K4.5V;UnK	98.0	-167.3	0.8 ±1.7	0.7 ±1.6	32.9±1.8			0.64	6.2577	0.950	
166	19232		225.1	-46.8	8.49 (206)	K0V...;OtH	225.4	-112.3			44.6±1.9	-6.9		0.89			
	19232	16858	224.4	-53.5	10.93	-;UnK	233.9	-110.0	-9.8 ±3.1	-7.6 ±3.1	44.1±9.2			0.33	5.2660	0.390	
167	20342		217.4	-42.0	8.78 (226)	K2.5V;BiN	-74.3	227.1			38.6±2.2	88.4		0.84			
	20342	20338	217.4	-42.0	11.53	K9Vk:;UnK	-78.7	235.0	4.6 ±3.2	-7.8 ±3.2	30.8±3.8			0.76	0.0111	1.000	
168	20591		165.5	-10.7	5.77 (51)	F4V;BiN	85.6	-17.9			40.6±0.8	-31.8		1.44			56 Per
	20591	18090	156.6	-11.0	9.47	K5;OtH	58.2	-21.4	0.8 ±2.2	0.7 ±1.7	33.6±1.5	14.1	-48.0±5.3	0.70	6.1997	0.790	
169	21352		163.1	-5.7	8.91 (237)	K5;BiN	17.0	-121.4			37.3±2.8	-5.0		0.79			
	21352	23302	172.9	-6.9	10.84	M0;UnK	33.7	-118.5	-10.1 ±3.3	-3.0 ±3.3	39.5±5.2			0.63	6.3688	0.180	
170	21730		153.0	4.5	5.36 (42)	A8V;BiN	-49.1	-88.7			44.5±9.3	20.1		1.71			2 Cam
	21730	18725	148.0	1.4	10.40	K3V;UnK	-40.5	-67.6	0.6 ±4.3	-15.8 ±4.0	44.6±3.8			0.64	4.5758	0.130	
171	22439		212.1	-33.1	6.27 (75)	F3-5V;OtH	109.7	-180.2			33.8±0.6	-3.7		1.16			
	22439	21489	211.8	-36.4	9.98	K4.5V;UnK	98.0	-167.3	11.2 ±1.4	-14.2 ±1.4	32.9±1.8			0.64	1.9444	0.310	
172	22531		261.3	-39.2	5.58 (45)	F0V;BiN	-74.8	-90.4			41.6±3.5	8.6		1.55			ι Pic A; kn: 22534
	22531	22562	261.2	-39.2	9.02	K2Vk:;OtH	-76.7	-87.3	1.9 ±2.1	-3.1 ±2.2	38.4±1.1	10.2	-1.6±3.4	0.80	0.0608	1.000	
173	22534		261.3	-39.2	6.42 (83)	F5V;BiN	-72.6	-88.1			38.5±2.6	23.3		1.22			ι Pic B
	22534	22562	261.2	-39.2	9.02	K2Vk:;OtH	-76.7	-87.3	4.1 ±4.1	-0.8 ±4.4	38.4±1.1	10.2	13.1±1.0	0.80	0.0540	1.000	
174	22615		143.8	14.0	8.09 (184)	G5;OtH	112.6	-11.9			41.0±1.4	-46.0		0.90			

Table 4—Continued

Indx	Pri	Cmp	ℓ	b	V	Type	μ_l	μ_b	$\Delta\mu_\ell^{cor}$	$\Delta\mu_b^{cor}$	d	v_r	Δv_r^{cor}	$\mathcal{M}$	$\Delta\theta d_p$	Prob	Comment
			deg	deg	mag		mas yr^{-1}				pc	km s^{-1}		$M_\odot$	pc		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	22615	19959	141.1	11.6	10.32	M0;UnK	100.9	-16.5	1.1 ±2.3	-4.1 ±2.3	36.0±2.2			0.64	2.5032	0.460	
175	24046		176.8	-7.3	6.97 (118)	F8V;OtH	186.8	109.3			40.0±1.3	15.3		1.09			kn: 24035
	24046	24035	176.7	-7.2	9.22	G5;UnK	188.0	111.6	-1.1 ±1.6	-2.4 ±1.6	39.7±1.9			0.79	0.0610	1.000	
176	24886		234.3	-32.1	9.18 (248)	K2.5V;BiN	-76.2	83.5			36.3±1.5	39.0		0.76			
	24886	24392	223.6	-30.7	10.54	M;UnK	-33.6	79.1	3.0 ±2.9	4.2 ±2.4	34.4±2.6			0.30	5.8877	0.430	
177	25300		148.5	15.1	7.32 (142)	G0;BiN	-18.6	-130.1			47.1±2.4	-17.9		0.96			
	25300	29974	146.8	22.0	8.41	K0;BiN	-12.2	-121.5	-7.6 ±2.5	1.7 ±2.6	47.4±3.0	-19.4	-1.7±1.1	0.89	5.7938	0.780	
178	25973		154.4	12.8	6.44 (85)	F8V;VaR	250.1	-19.3			42.7±0.9	33.0		1.22			18 Cam
	25973	26384	158.9	10.9	10.15	K5;UnK	233.6	-20.2	3.0 ±2.0	2.5 ±2.0	36.2±2.4			0.64	3.5339	0.200	
179	26412		231.9	-27.6	6.15 (70)	F0IV;BiN	58.1	-15.2			39.4±1.7	26.7		1.43			ν^{01} Col
	26412	25679	221.9	-26.4	8.32	G8V;UnK	78.2	-21.8	-0.2 ±2.5	-1.6 ±1.6	49.5±2.1			0.90	6.1354	0.510	
180	27100		275.5	-31.4	4.34 (20)	A7V;OtH	-6.3	-30.0			45.9±0.3	-3.0		1.35			δ Dor
	27100	28869	270.9	-29.0	7.84	G0V;OtH	-13.5	-49.3	5.0 ±1.8	20.2 ±1.7	45.7±1.2	-5.2	2.0±2.5	0.99	3.6881	0.160	
181	27417		229.2	-24.1	7.80 (170)	G1V;OtH	25.8	-42.4			43.3±1.1	3.0		1.02			
	27417	26977	230.0	-25.6	8.70	G9V+..;OtH	32.3	-37.1	-6.4 ±1.8	-4.8 ±1.8	51.6±2.3	-8.1	11.4±0.3	0.88	1.2071	0.210	
182	28626		178.7	5.0	6.79 (109)	F5;BiN	-2.1	23.3			48.6±2.9	-18.0		1.39			
	28626	27528	177.0	2.8	8.46	K0;BiN	-2.6	19.6	-1.8 ±1.4	0.7 ±1.4	40.4±2.3	-7.9	-10.3±10.0	0.83	2.3166	0.360	
183	28790		252.2	-26.8	5.93 (58)	F4V;BiN	-278.9	-12.5			26.9±0.5	27.0		1.11			
	28790	28764	252.1	-26.8	6.35	G0IV-V;BiN	-259.1	-26.7	-19.6 ±1.2	14.4 ±1.3	26.6±0.2	27.4	-0.4±1.8	1.03	0.0256	1.000	
184	31167		216.0	-6.9	5.60 (48)	F0Vnn;BiN	36.8	-18.6			41.8±0.4	-20.8		1.51			
	31167	29330	220.9	-15.1	8.80	K3V;UnK	50.8	-36.2	-5.0 ±1.8	3.8 ±2.1	43.6±1.9	66.3	-85.7±2.1	0.84	6.9464	0.230	
185	31509		244.7	-18.5	6.36 (79)	G0V;BiN	67.3	-82.0			39.6±0.7	30.0		1.28			
	31509	31547	244.8	-18.5	7.23	G1V;BiN	64.9	-85.4	2.2 ±1.7	3.2 ±1.7	39.4±0.9	30.7	-0.7±3.0	0.96	0.0552	1.000	
186	31681		196.8	4.5	1.93 (2)	A0IV;SpB	55.2	-12.6			33.5±2.5	-12.1		2.81			Alhena; 24 γ Gem
	31681	31626	193.7	5.8	10.18	K5;OtH	36.8	-7.9	14.4 ±2.6	-2.6 ±2.7	34.9±2.3	82.7	-95.3±2.7	0.65	1.9634	0.600	
187	33705		242.0	-11.9	6.62 (98)	F5.5VF;OtH	-24.8	32.0			37.4±0.5	16.3		1.17			
	33705	33691	242.1	-12.0	8.44	G9V;OtH	-22.8	31.9	-2.2 ±1.8	0.2 ±1.7	37.1±1.2	16.4	-0.1±0.4	0.87	0.0587	1.000	
188	33932		135.1	27.1	8.31 (195)	G0;OtH	80.5	-10.0			47.9±1.5	-12.1		0.87			
	33932	40527	134.3	30.5	8.40	F4V;BiN	76.5	-29.0	3.4 ±1.6	22.8 ±1.5	45.0±7.0	-6.7	-5.7±0.4	0.94	2.8683	0.270	kn: 40532
189	34426		200.8	10.6	7.70 (165)	F8;BiN	167.4	-140.9			45.9±1.6	-12.7		0.92			kn: 34407
	34426	34407	200.8	10.6	7.80	G0V;BiN	164.0	-136.7	3.4 ±1.4	-4.3 ±1.4	46.8±1.9	-13.0	0.3±0.3	0.93	0.0383	1.000	
190	34714		184.4	18.3	7.16 (131)	F5;OtH	-31.9	-107.0			48.2±1.4	3.1		1.09			
	34714	34700	184.9	18.1	8.01	G0;OtH	-32.2	-107.4	-0.1 ±1.7	0.6 ±1.6	45.2±1.6	3.1	0.0±0.4	0.93	0.4182	1.000	
191	36485		204.7	14.8	7.16 (132)	F5;BiN	-0.2	-48.9			45.4±2.0	-1.0		1.05			
	36485	36497	204.7	14.8	7.95	F8;OtH	-0.6	-44.7	0.4 ±1.5	-4.1 ±1.5	46.9±1.9	-2.6	1.6±0.7	0.94	0.0247	1.000	
192	36497		204.7	14.8	7.95 (179)	F8;OtH	-0.6	-44.7			46.9±1.9	-2.6		0.94			

Table 4—Continued

Indx	Pri	Cmp	ℓ	b	V	Type	μ_l	μ_b	$\Delta\mu_\ell^{cor}$	$\Delta\mu_b^{cor}$	d	v_r	Δv_r^{cor}	$\mathcal{M}$	$\Delta\theta d_p$	Prob	Comment
			deg	deg	mag		............mas yr^{-1}............				pc	....km s^{-1}....		$M_\odot$	pc		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	36497	33818	199.7	9.3	10.13	K8;OtH	-5.9	-45.4	5.3 ±1.6	-0.3 ±1.6	39.5±3.7	-14.0	12.4±10.0	0.63	6.0363	0.500	
193	36512		231.6	1.2	7.73 (167)	G2V;OtH	117.2	-9.9			37.0±1.0	8.4		0.89			
	36512	36121	230.9	0.4	9.21	K4+v;UnK	109.0	-6.9	8.7 ±1.9	-2.3 ±1.9	24.8±0.9			0.63	0.6709	0.550	
194	37563		271.6	-16.9	7.17 (133)	G3V;YnG	-165.5	18.7			32.8±0.5	17.5		1.03			
	37563	37918	272.3	-16.7	8.19	K0V;YnG	-166.5	14.3	-0.3 ±1.9	3.4 ±2.0	38.9±2.5	17.2	0.0±0.4	0.85	0.3968	0.980	kn: 37923
	37563	37923	272.3	-16.7	8.27	K0V;YnG	-156.1	13.4	-10.7 ±4.5	4.3 ±4.6	29.9±3.2	17.3	-0.1±0.3	0.85	0.3966	0.910	
195	37718		263.5	-12.8	6.64 (99)	F9VFe-;BiN	-179.5	-34.3			30.8±0.4	8.6		1.07			kn: 37727
	37718	37727	263.5	-12.8	7.55	G5V;BiN	-176.4	-31.5	-3.1 ±1.4	-2.8 ±1.4	29.9±0.5	9.2	-0.6±0.3	0.87	0.0078	1.000	
196	38129		252.9	-6.2	7.14 (130)	F7V;ClN	-25.8	-130.4			40.9±0.8	-7.0		1.08			
	38129	38236	249.8	-4.2	10.93	M0;UnK	-52.7	-132.0	24.2 ±3.0	3.1 ±3.0	41.6±2.5			0.27	2.6544	0.110	
197	38160		272.9	-16.6	5.78 (52)	F4V;BiN	-163.5	14.9			34.6±0.3	20.5		1.34			
	38160	37563	271.6	-16.9	7.17	G3V;YnG	-165.5	18.7	4.8 ±1.6	-2.0 ±1.6	32.8±0.5	17.5	3.6±1.7	1.03	0.7789	0.940	
	38160	37918	272.3	-16.7	8.19	K0V;YnG	-166.5	14.3	4.3 ±1.6	1.3 ±1.7	38.9±2.5	17.2	3.6±1.7	0.85	0.3610	0.960	kn: 37923
	38160	37923	272.3	-16.7	8.27	K0V;YnG	-156.1	13.4	-6.1 ±4.4	2.3 ±4.5	29.9±3.2	17.3	3.5±1.7	0.85	0.3616	0.890	
198	40663		226.9	17.2	8.80 (228)	K0;UnK	-68.0	-191.6			47.6±3.1			0.87			
	40663	41425	224.7	21.0	9.95	M:;UnK	-75.6	-203.2	11.2 ±2.2	8.8 ±3.3	47.7±3.7			0.75	3.5745	0.760	
199	40918		150.5	33.8	8.03 (182)	G0;BiN	-23.5	8.9			36.5±1.2	5.2		0.86			
	40918	40882	150.5	33.7	8.43	G5;BiN	-24.9	9.5	1.3 ±2.0	-0.5 ±2.0	37.3±1.6	2.1	3.1±0.5	0.83	0.0457	1.000	
200	42042		256.8	2.0	6.69 (101)	F4V;UnK	-102.0	-31.2			45.1±0.8			1.28			
	42042	41529	255.9	1.1	8.39	G9V+;OtH	-95.2	-33.6	-6.3 ±2.0	2.8 ±2.0	40.8±1.3	-1.7		0.87	0.9557	0.160	
201	42401		237.9	16.6	9.67 (262)	K4+vk:;VaR	-65.0	-31.6			35.0±1.8	23.7		0.68			
	42401	41662	233.8	16.6	10.19	K4;UnK	-59.7	-31.8	5.4 ±3.0	-0.9 ±2.6	33.5±1.8			0.62	2.4216	0.920	
202	42940		179.7	38.3	8.52 (210)	K3V;BiN	629.0	-331.7			26.6±0.6	-25.0		0.78			
	42940	42145	179.5	36.5	8.74	K2V;OtH	605.7	-328.9	23.5 ±1.4	-7.0 ±1.3	28.5±1.0	58.4	-82.4±1.4	0.77	0.8419	0.370	
203	43947		254.2	10.1	8.34 (196)	F5V;BiN	30.3	-1.4			37.6±12.4	-10.7		0.92			
	43947	42910	245.6	13.1	10.16	K7V;UnK	23.4	-13.4	-2.1 ±3.8	16.0 ±2.5	36.4±2.5			0.64	5.8147	0.800	
204	43970		212.5	34.6	5.22 (37)	A5III;OtH	6.3	63.5			45.7±0.5	-4.6		1.36			62 o^{01} Cnc
	43970	44001	212.3	34.8	5.68	F0IV;OtH	5.5	65.0	0.5 ±1.0	-1.4 ±1.1	46.1±0.7	-4.0	-0.6±2.8	1.37	0.2163	1.000	63 o^{02} Cnc
205	44143		276.8	-8.6	5.17 (35)	F4V;OtH	-328.1	48.9			26.4±0.2	11.0		1.34			b02 Car
	44143	48133	277.2	0.9	7.91	K1V;BiN	-325.8	33.0	-2.9 ±1.2	0.9 ±1.5	26.0±0.4	-0.1	11.7±0.6	0.84	4.3586	0.980	
206	44777		230.0	29.9	8.15 (187)	F8;OtH	-71.3	-66.0			46.6±2.0	-10.3		1.00			
	44777	46028	228.9	35.0	8.44	F0;UnK	-55.4	-47.8	-16.0 ±1.9	-14.5 ±1.9	44.8±15.5			0.83	4.2411	0.820	
207	44858		198.8	40.9	8.25 (191)	G0V;BiN	-82.4	-34.5			47.1±2.9	29.6		0.94			kn: 44864
	44858	44864	198.8	40.9	8.28	G0V;BiN	-84.9	-31.3	2.6 ±1.6	-3.2 ±1.8	42.6±2.0	25.2	4.4±3.0	0.91	0.0118	1.000	
208	45836		166.6	43.9	6.14 (69)	F3V;BiN	-135.2	-61.4			27.4±0.4	-8.3		1.12			37 Lyn
	45836	45859	166.5	43.9	7.82	G5;OtH	-131.2	-63.3	-4.0 ±1.7	1.8 ±1.6	28.3±0.6	-7.2	-1.1±0.1	0.82	0.0307	1.000	

Table 4—Continued

Indx	Pri	Cmp	ℓ	b	V	Type	μ_l	μ_b	$\Delta\mu_\ell^{cor}$	$\Delta\mu_b^{cor}$	d	v_r	Δv_r^{cor}	$\mathcal{M}$	$\Delta\theta d_p$	Prob	Comment
			deg	deg	mag		.... mas yr^{-1}	....			pc	.... km s^{-1}	....	$M_\odot$	pc		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
209	46018		206.8	42.8	9.46 (256)	M0;UnK	133.5	-171.2			36.0±3.0			0.33			
	46018	44387	200.5	39.2	9.95	K7;UnK	147.8	-166.7	-0.7 ±5.0	6.7 ±4.2	38.0±2.7			0.31	3.7166	0.740	
210	46535		269.4	4.8	6.98 (119)	F8VFe-;BiN	-76.1	-54.4			41.1±0.8	17.2		1.15			kn: 46523
	46535	46523	269.4	4.8	7.01	F8V;BiN	-84.0	-55.1	7.9 ±1.4	0.7 ±1.4	42.2±0.9	19.3	-2.1±1.0	1.23	0.0216	1.000	
211	47110		185.9	47.9	8.25 (192)	G5;OtH	90.1	-99.7			38.7±1.4	-0.6		0.90			
	47110	47133	185.9	48.0	11.09	K5;UnK	88.8	-106.0	1.3 ±3.0	6.2 ±3.1	33.7±2.6			0.34	0.0305	1.000	
212	47436		189.3	48.7	6.90 (116)	F5;OtH	-5.4	-67.6			49.0±1.1	5.3		1.15			
	47436	47403	189.4	48.6	7.12	F5;OtH	-4.4	-66.3	-1.2 ±2.0	-1.3 ±1.9	49.0±1.2	-31.6	36.9±0.5	1.12	0.1174	1.000	
213	49018		206.9	51.5	7.86 (173)	K0V...;BiN	-21.6	-234.5			31.7±0.9	30.9		0.84			
	49018	48786	213.8	49.5	8.40	G5;BiN	-67.2	-221.6	8.0 ±17.7	-1.9 ±9.1	41.9±1.9	31.0	0.6±35.1	0.85	2.6813	0.130	
214	49846		221.1	51.2	8.42 (201)	K2;UnK	5.0	-247.7			42.6±2.0	32.0		0.85			
	49846	51942	215.7	58.9	8.71	G5;OtH	27.6	-264.7	4.8 ±1.4	-0.5 ±1.7	46.3±2.4	46.5	-21.7±1.1	0.86	6.1626	0.150	
215	51312		189.7	58.7	7.83 (171)	G0;UnK	70.9	-107.7			46.9±1.7			0.95			
	51312	52140	193.5	60.9	8.62	G8III;UnK	64.0	-106.2	0.7 ±2.5	-5.3 ±2.6	46.8±1.9			0.85	2.4242	0.920	
216	52469		167.3	58.4	5.18 (36)	F5III;SpB	179.4	-213.2			37.1±0.4	10.0		1.50			kn: 52498
	52469	52498	167.2	58.5	7.28	F9V;SpB	173.8	-214.2	5.8 ±1.5	1.1 ±1.5	37.3±0.7	6.1	3.8±8.3	0.97	0.0518	1.000	
217	52727		283.0	8.6	2.69 (7)	G6III;BiN	91.2	-14.0			35.9±0.5	6.2		0.75			μ Vel
	52727	53106	283.7	9.2	6.56	F7V;OtH	87.4	-12.1	3.4 ±2.5	-2.4 ±2.4	49.8±1.1	18.4	-12.1±0.3	1.17	0.5487	0.700	
218	52787		268.7	32.2	8.39 (199)	K0V;YnG	-89.1	-89.8			34.5±1.0	24.0		0.84			
	52787	52776	268.7	32.2	9.91	K4.5Vk;UnK	-91.6	-91.8	2.7 ±3.0	1.8 ±3.1	32.6±1.5			0.66	0.0392	1.000	
219	53791		170.6	62.5	6.03 (65)	F9V;SpB	156.0	-42.8			44.3±0.7	-6.6		1.35			
	53791	53756	170.2	62.3	10.64	-;UnK	161.6	-64.4	-5.4 ±1.7	22.5 ±1.7	41.7±3.7			0.64	0.2079	0.540	
220	54233		157.0	59.4	7.04 (125)	F5;BiN	64.6	-54.3			39.5±1.1	-12.5		1.10			
	54233	53051	165.1	59.3	8.08	G5;OtH	69.8	-62.9	-7.7 ±1.5	0.8 ±1.4	42.6±1.6	17.4	-29.0±3.2	0.89	2.8562	0.350	
221	54692		168.6	64.4	7.19 (136)	F8;BiN	270.1	10.0			46.8±1.3	8.2		1.06			kn: 54681
	54692	54681	168.7	64.4	8.26	G5;UnK	269.8	16.9	0.2 ±1.4	-7.2 ±1.3	48.4±1.9			0.93	0.0306	1.000	
222	55486		231.6	67.5	7.93 (178)	G5;BiN	14.7	-174.7			31.0±0.9	-4.1		0.85			
	55486	56930	255.9	65.7	9.66	K0;UnK	-51.6	-167.6	3.0 ±2.2	-1.2 ±1.8	43.4±3.5			0.77	5.2904	0.340	
223	55638		257.5	58.5	8.80 (229)	K0;UnK	-22.1	-163.0			39.1±2.0			0.83			
	55638	56367	268.2	54.1	11.29	M0Vk;UnK	-44.6	-161.5	-1.9 ±5.8	3.2 ±5.2	34.3±3.0			0.33	5.0485	0.320	
	55638	57555	265.7	63.2	11.40	-;UnK	-64.2	-152.3	23.3 ±5.5	-5.1 ±5.3	36.1±4.5			0.61	4.1767	0.360	
224	55765		236.8	67.4	5.58 (46)	F2V;BiN	-71.4	-122.8			43.9±0.6	19.3		1.58			81 Leo
	55765	55262	240.8	64.4	7.12	F8V;OtH	-87.0	-118.1	5.2 ±1.3	5.3 ±1.3	44.0±1.3	9.1	11.0±1.4	1.22	2.6398	0.960	
225	56321		235.6	69.7	7.26 (139)	F7V;OtH	-79.7	-112.1			47.5±1.3	21.9		1.08			
	56321	57202	238.3	72.2	9.42	K5;UnK	-87.6	-118.7	1.3 ±2.1	6.3 ±2.0	52.2±5.3			0.76	2.1987	0.250	
226	57291		294.4	3.1	7.47 (151)	G6V;OtH	-41.5	-84.0			39.7±1.0	48.9		0.99			

Table 4—Continued

Indx	Pri	Cmp	ℓ	b	V	Type	μ_l	μ_b	$\Delta\mu_\ell^{cor}$	$\Delta\mu_b^{cor}$	d	v_r	Δv_r^{cor}	$\mathcal{M}$	$\Delta\theta d_p$	Prob	Comment
			deg	deg	mag		mas yr^{-1}				pc	km s^{-1}		$M_\odot$	pc		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	57291	56760	291.5	9.7	8.89	K0V;BiN	-42.0	-108.2	13.7 ±2.3	-5.5 ±2.3	40.4±1.8	42.0	5.1±0.3	0.87	4.9824	0.120	
227	58001		140.8	61.4	2.41 (5)	A0Ve;F/E	-96.4	38.6			25.5±0.3	-12.6		2.62			64 γ UMa
	58001	61100	129.0	61.8	8.08	K2V;RoT	-106.2	18.3	-5.3 ±1.5	2.1 ±1.6	25.1±0.7	-1.3	-10.0±1.0	0.80	2.5071	0.930	
	58001	61481	128.9	65.7	8.52	K0V;F/E	-106.9	20.8	-4.7 ±1.5	5.8 ±1.4	27.0±0.7	-9.2	-1.9±1.1	0.78	3.0512	0.180	
	58001	61946	125.8	61.3	8.27	K3V;F/E	-121.7	15.2	6.8 ±1.7	-1.2 ±1.6	23.4±0.4	-6.3	-4.7±1.4	0.78	3.2053	0.670	
	58001	62512	123.6	56.8	5.83	F5V;BiN	-108.7	3.2	-8.3 ±1.7	-0.2 ±1.7	24.0±1.6	-17.6	6.8±2.1	1.13	4.4269	0.400	
228	58029		288.4	31.3	8.44 (202)	G7V;YnG	-111.0	-65.0			44.9±1.5	15.5		0.85			
	58029	55505	278.4	33.8	8.89	K5V;YnG	-71.1	-65.7	-21.5 ±2.1	-12.4 ±1.9	44.9±4.7	11.1	7.0±5.8	0.86	6.8984	1.000	
229	58067		240.5	74.8	8.20 (189)	G0;BiN	-233.3	-384.6			40.5±1.8	5.9		0.89			kn: 58073
	58067	58073	240.5	74.9	8.43	G5;BiN	-236.3	-384.9	3.2 ±1.3	0.2 ±1.3	38.4±2.0	5.6	0.3±0.1	0.85	0.0144	1.000	
230	58085		297.3	-4.1	6.38 (81)	F2IV;UnK	28.5	-62.8			43.5±0.7	-6.5		1.34			
	58085	58121	297.3	-4.1	8.40	G3V;OtH	27.1	-59.2	1.5 ±1.8	-3.6 ±1.8	41.0±1.2	-7.6	1.1±0.5	0.86	0.0465	1.000	
231	58369		185.8	77.3	6.42 (84)	A9V;BiN	95.6	-80.7			47.0±1.0	-1.6		1.47			
	58369	58940	176.5	78.0	7.51	F8;OtH	99.4	-60.5	7.3 ±1.8	-4.1 ±1.6	51.6±1.5	-8.0	5.4±2.8	1.12	1.7085	0.390	
232	59431		136.0	62.7	8.14 (185)	K0;BiN	206.2	70.9			35.4±3.7	4.1		0.86			
	59431	60121	133.8	63.7	11.12	K7V;UnK	196.9	69.8	7.2 ±2.2	7.7 ±2.1	28.0±1.7			0.35	0.8709	0.360	
233	59432		136.0	62.7	7.96 (180)	K0V+K1;BiN	196.6	62.3			30.1±2.8	-8.1		0.86			kn: 59431
	59432	60121	133.8	63.7	11.12	K7V;UnK	196.9	69.8	-3.5 ±2.2	0.1 ±2.1	28.0±1.7			0.35	0.7402	1.000	
234	60325		277.7	73.0	9.97 (265)	K0;UnK	-131.7	-103.2			44.0±3.3			0.71			
	60325	59310	251.4	77.5	10.06	K5;UnK	-77.9	-144.3	0.0 ±6.8	-4.2 ±3.6	44.4±3.0			0.69	6.1166	0.210	
235	60601		300.3	-3.0	6.29 (77)	G9IV;UnK	-52.9	-106.9			48.5±1.1	24.3		1.06			
	60601	65100	305.8	-3.8	8.54	G5V;OtH	-61.4	-99.8	-1.0 ±1.9	-6.0 ±1.8	48.1±2.2	37.1	-13.8±0.5	0.82	4.7553	0.690	
236	61100		129.0	61.8	8.08 (183)	K2V;RoT	-106.2	18.3			25.1±0.7	-1.3		0.80			
	61100	61481	128.9	65.7	8.52	K0V;F/E	-106.9	20.8	0.6 ±1.7	-2.0 ±1.9	27.0±0.7	-9.2	8.1±1.0	0.78	1.7331	1.000	
	61100	61946	125.8	61.3	8.27	K3V;F/E	-121.7	15.2	14.4 ±1.9	-2.3 ±2.0	23.4±0.4	-6.3	5.3±1.3	0.78	0.7003	0.970	
	61100	65327	114.8	58.7	9.69	K5;OtH	-119.7	-9.3	11.5 ±2.1	4.0 ±2.2	24.8±0.7	-6.6	6.8±2.6	0.61	3.3686	0.460	
237	61443		301.1	1.0	6.22 (73)	G3III;BiN	-264.5	-91.4			47.2±0.8	6.0		1.25			
	61443	65433	305.7	-7.7	7.25	K0IV;UnK	-263.5	-90.7	-2.5 ±1.8	1.4 ±1.9	51.9±1.2			0.93	8.1355	0.260	
238	61481		128.9	65.7	8.52 (211)	K0V;F/E	-106.9	20.8			27.0±0.7	-9.2		0.78			
	61481	59496	132.4	57.5	10.05	K5;OtH	-96.4	14.0	-7.4 ±2.1	1.6 ±2.3	28.0±1.0	-15.0	5.1±5.1	0.62	3.9607	0.820	
	61481	65327	114.8	58.7	9.69	K5;OtH	-119.7	-9.3	4.2 ±2.1	-2.4 ±2.2	24.8±0.7	-6.6	-1.0±2.6	0.61	4.5066	0.450	
239	61932		301.3	13.9	2.20 (3)	A1IV+;BiN	-193.0	-19.3			39.9±0.4	-5.5		2.91			γ Cen
	61932	61622	300.6	14.3	3.85	A2V;OtH	-184.4	-17.0	-8.8 ±2.2	-2.7 ±2.0	40.2±0.9	5.0	-10.1±2.8	2.59	0.5261	0.980	τ Cen
240	61939		285.2	82.4	9.07 (244)	K2;BiN	22.6	5.1			32.6±1.7	-9.2		0.78			
	61939	62772	303.9	85.4	10.51	M0;UnK	36.2	0.3	-10.7 ±1.5	0.1 ±1.5	39.4±2.6			0.59	2.0414	0.740	
241	62686		301.4	83.4	9.20 (249)	K5;BiN	-124.1	-36.4			38.3±5.0	-2.9		0.76			

Table 4—Continued

Indx	Pri	Cmp	ℓ	b	V	Type	μ_l	μ_b	$\Delta\mu_\ell^{cor}$	$\Delta\mu_b^{cor}$	d	v_r	Δv_r^{cor}	$\mathcal{M}$	$\Delta\theta d_p$	Prob	Comment
			deg	deg	mag		....	....	mas yr^{-1}	....	pc	....	km s^{-1}	$M_\odot$	pc		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	62686	62794	307.6	88.3	9.91	K2V;OtH	-142.7	-24.6	15.6 ±1.7	3.2 ±1.6	37.6±2.5	-4.5	1.0±10.0	0.66	3.2939	0.660	
242	62758		304.6	88.4	9.09 (246)	K1Ve;F/E	-142.9	-33.8			37.6±1.6	-5.1		0.80			
	62758	62686	301.4	83.4	9.20	K5;BiN	-124.1	-36.4	-16.7 ±1.6	-7.5 ±2.1	38.3±5.0	-2.9	-1.5±3.1	0.76	3.2631	0.140	
	62758	62794	307.6	88.3	9.91	K2V;OtH	-142.7	-24.6	-1.7 ±1.9	-1.7 ±1.8	37.6±2.5	-4.5	-0.6±10.5	0.66	0.0678	1.000	
243	62875		303.8	59.3	6.11 (68)	F5V;BiN	-263.0	-0.3			32.7±0.3	-6.4		1.29			38 Vir
	62875	63421	306.6	56.0	11.85	-;UnK	-256.8	14.1	-4.9 ±4.5	-6.0 ±4.8	34.6±4.0			0.56	2.1099	0.210	
244	62956		122.2	61.2	1.76 (1)	A0p...;RoT	-107.2	-21.4			25.3±0.1	-9.3		2.91			Alioth; 77 ϵ UMa
	62956	59774	132.6	59.4	3.32	A3V;VaR	-108.9	-3.9	6.8 ±16.0	-3.4 ±23.4	24.7±0.1	-13.4	3.0±0.7	1.63	2.3983	0.710	Megrez; 69 δ UMa
	62956	61481	128.9	65.7	8.52	K0V;F/E	-106.9	20.8	2.6 ±15.8	-24.6 ±23.2	27.0±0.7	-9.2	-0.9±1.0	0.78	2.4072	0.100	
	62956	65477	112.8	61.5	3.99	A5V;VaR	-119.5	-15.0	10.7 ±15.9	-21.6 ±23.2	25.1±0.1	-8.8	0.5±1.0	1.30	1.9982	0.450	Alcor; 80 g UMa
245	64057		353.4	85.2	8.15 (188)	G5V;BiN	-61.7	293.7			35.4±1.2	-1.9		0.85			kn: 64059
	64057	64059	353.5	85.2	8.55	G0;BiN	-63.4	293.3	2.3 ±1.4	0.6 ±1.4	37.3±1.7	-2.0	0.1±0.3	0.83	0.0067	1.000	
246	64532		116.8	60.2	6.82 (112)	G1Va;BiN	-114.5	-0.3			25.3±0.3	-8.9		0.91			kn: 64523
	64532	61100	129.0	61.8	8.08	K2V;RoT	-106.2	18.3	2.1 ±1.5	4.1 ±1.7	25.1±0.7	-1.3	-8.9±0.6	0.80	2.7062	0.990	
	64532	61481	128.9	65.7	8.52	K0V;F/E	-106.9	20.8	2.6 ±1.5	7.2 ±1.6	27.0±0.7	-9.2	-0.8±0.8	0.78	3.4412	0.630	
	64532	61946	125.8	61.3	8.27	K3V;F/E	-121.7	15.2	14.3 ±1.7	1.3 ±1.7	23.4±0.4	-6.3	-3.6±1.2	0.78	2.0028	0.230	
	64532	65327	114.8	58.7	9.69	K5;OtH	-119.7	-9.3	4.0 ±1.8	3.6 ±2.0	24.8±0.7	-6.6	-2.0±2.5	0.61	0.7867	1.000	
247	65378		113.1	61.6	2.23 (4)	A2V;SpB	-121.6	-6.4			26.3±1.2	-9.3		2.55			Mizar; 79 ζ UMa A; kn: 65477
	65378	61100	129.0	61.8	8.08	K2V;RoT	-106.2	18.3	-2.6 ±2.3	3.9 ±2.2	25.1±0.7	-1.3	-9.9±1.3	0.80	3.4581	0.530	
	65378	61481	128.9	65.7	8.52	K0V;F/E	-106.9	20.8	-2.0 ±2.3	7.4 ±2.1	27.0±0.7	-9.2	-1.8±1.4	0.78	3.7194	0.250	
	65378	61946	125.8	61.3	8.27	K3V;F/E	-121.7	15.2	9.6 ±2.3	0.9 ±2.2	23.4±0.4	-6.3	-4.5±1.7	0.78	2.7766	0.110	
	65378	62512	123.6	56.8	5.83	F5V;BiN	-108.7	3.2	-5.5 ±2.2	2.2 ±2.3	24.0±1.6	-17.6	6.9±2.3	1.13	3.2863	0.330	
	65378	64532	116.8	60.2	6.82	G1Va;BiN	-114.5	-0.3	-5.0 ±1.8	-1.2 ±1.9	25.3±0.3	-8.9	-0.9±1.2	0.91	1.0545	0.990	kn: 64523
	65378	65327	114.8	58.7	9.69	K5;OtH	-119.7	-9.3	-1.0 ±2.2	2.1 ±2.4	24.8±0.7	-6.6	-2.9±2.8	0.61	1.3691	1.000	
	65378	65477	112.8	61.5	3.99	A5V;VaR	-119.5	-15.0	-2.4 ±1.8	7.8 ±1.9	25.1±0.1	-8.8	-0.5±1.4	1.30	0.0904	1.000	Alcor; 80 g UMa
248	65477		112.8	61.5	3.99 (14)	A5V;VaR	-119.5	-15.0			25.1±0.1	-8.8		1.30			Alcor; 80 g UMa
	65477	61100	129.0	61.8	8.08	K2V;RoT	-106.2	18.3	-2.2 ±1.8	-4.2 ±1.7	25.1±0.7	-1.3	-9.3±1.0	0.80	3.3713	0.980	
	65477	61481	128.9	65.7	8.52	K0V;F/E	-106.9	20.8	-1.7 ±1.8	-0.8 ±1.6	27.0±0.7	-9.2	-1.3±1.1	0.78	3.6282	0.940	
	65477	62512	123.6	56.8	5.83	F5V;BiN	-108.7	3.2	-4.5 ±1.7	-5.8 ±1.8	24.0±1.6	-17.6	7.5±2.2	1.13	3.1587	0.260	
	65477	64532	116.8	60.2	6.82	G1Va;BiN	-114.5	-0.3	-3.1 ±1.4	-9.1 ±1.4	25.3±0.3	-8.9	-0.4±0.8	0.91	1.0360	0.950	kn: 64523
	65477	65327	114.8	58.7	9.69	K5;OtH	-119.7	-9.3	1.1 ±1.9	-5.7 ±2.0	24.8±0.7	-6.6	-2.4±2.6	0.61	1.2810	1.000	
249	65602		313.2	37.9	8.72 (225)	K2+v;OtH	-341.8	-3.6			29.4±0.7	-7.0		0.78			kn: 65574
	65602	65574	313.1	37.9	8.77	K2.5Vk;BiN	-343.5	-5.5	1.7 ±2.8	1.5 ±2.4	30.2±1.0	-10.9	4.0±1.7	0.77	0.0455	1.000	
250	65775		98.4	73.1	7.64 (159)	G0;OtH	109.1	79.9			38.0±0.9	-9.6		0.95			
	65775	65469	94.2	76.3	10.00	K3V;OtH	92.3	90.8	9.8 ±1.5	-0.6 ±1.5	39.9±2.4	-7.0	-2.1±10.0	0.71	2.2535	0.360	
251	65808		311.6	26.7	7.26 (140)	G7IV-V;OtH	-214.3	-38.5			33.0±0.8	-17.9		0.91			

Table 4—Continued

Indx	Pri	Cmp	ℓ	b	V	Type	μ_l	μ_b	$\Delta\mu_\ell^{cor}$	$\Delta\mu_b^{cor}$	d	v_r	Δv_r^{cor}	$\mathcal{M}$	$\Delta\theta d_p$	Prob	Comment
			deg	deg	mag		....	mas yr^{-1}	....		pc	....	$\mathrm{km\,s}^{-1}$	$M_\odot$	pc		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	65808	68772	317.9	20.8	9.88	K4Vk:;UnK	-213.1	-39.5	9.4 ±1.9	-2.1 ±1.9	34.2±2.0			0.65	4.7252	0.190	
252	66121		305.2	-14.9	6.52 (93)	F8VFe-;BiN	-387.0	-89.1			35.2±0.6	-28.9		1.08			kn: 66125
	66121	65302	304.2	-18.5	7.88	G5VFe-;OtH	-376.3	-101.1	-14.2 ±1.8	3.4 ±1.8	34.7±0.6	7.3	-34.1±0.3	0.83	2.3146	0.410	
253	67246		337.9	65.4	6.33 (78)	G0.5IV;BiN	-494.6	167.7			31.7±0.4	-30.9		1.03			
	67246	67291	338.1	65.3	10.02	M0V;OtH	-495.4	167.4	1.8 ±2.4	1.7 ±2.3	30.8±1.5	-25.3	-5.8±2.5	0.65	0.0750	1.000	
254	67389		315.4	24.4	6.73 (104)	F2V;UnK	32.8	-15.7			44.4±1.0			1.25			
	67389	67203	316.7	30.9	8.21	G1V;OtH	27.8	-23.8	5.4 ±1.9	11.1 ±5.7	50.3±2.1	-1.9		0.97	5.1752	0.100	
255	68101		312.3	7.0	6.00 (62)	G6IV-V;BiN	-98.3	-208.5			38.7±0.7	6.2		1.16			
	68101	63353	304.0	7.2	9.79	K6Vk:;OtH	-86.5	-212.2	-2.1 ±2.4	1.8 ±2.4	34.2±2.2	9.6	-1.1±0.4	0.64	5.5838	0.760	
256	68796		116.5	41.6	8.21 (190)	G5;OtH	172.2	-29.2			43.3±1.1	12.8		0.93			
	68796	69767	110.9	47.7	11.07	-;UnK	169.9	-21.7	8.0 ±2.3	-1.4 ±2.4	46.6±4.0			0.61	5.5089	0.170	
257	69220		317.3	15.7	8.29 (194)	G4V;BiN	-69.3	-306.6			48.2±2.2	48.9		0.86			kn: 69224
	69220	69224	317.3	15.7	9.63	G0;UnK	-62.5	-309.8	-6.9 ±1.7	3.2 ±1.8	47.6±3.7			0.80	0.0135	1.000	
258	69230		39.1	72.5	8.55 (215)	G2V;OtH	-38.4	-22.6			48.4±2.1	-20.1		0.87			
	69230	69787	62.8	70.0	10.57	K5V;UnK	-30.1	-14.8	-3.1 ±3.3	2.4 ±3.4	52.1±6.8			0.67	6.7280	0.290	
259	69518		88.1	64.8	7.17 (134)	G0;OtH	102.1	97.4			37.4±0.5	-14.9		1.09			
	69518	65775	98.4	73.1	7.64	G0;OtH	109.1	79.9	13.6 ±1.3	9.1 ±1.4	38.0±0.9	-9.6	-1.6±0.6	0.95	5.8734	0.410	
260	69989		2.8	65.1	5.41 (43)	F5IV;BiN	39.3	-103.8			26.1±0.2	-1.0		1.35			18 Boo
	69989	68551	1.1	69.9	10.63	K7;BiN	55.4	-98.6	-13.6 ±2.2	-3.1 ±2.4	27.7±3.1	-25.5	23.4±10.1	0.50	2.2198	0.570	
261	70782		350.8	56.4	7.02 (124)	F8;OtH	-111.9	168.8			39.1±1.0	-6.0		1.16			
	70782	69653	346.4	58.7	7.03	F8;BiN	-125.2	160.9	1.7 ±1.9	1.5 ±1.9	40.6±2.2	-44.3	40.5±0.4	1.00	2.2600	1.000	
262	71682		331.0	30.2	6.99 (120)	F5V;BiN	21.5	-42.7			42.8±1.1	11.1		1.10			kn: 71686
	71682	71686	331.0	30.2	9.79	K4V;YnG	11.8	-45.9	9.7 ±2.3	3.1 ±2.1	40.5±2.9	9.6	1.5±10.0	0.70	0.0255	1.000	
263	72469		63.8	63.1	6.15 (71)	F2V;OtH	170.7	216.6			40.7±0.6	-34.6		1.38			
	72469	72463	70.3	62.2	10.52	K4;UnK	197.4	197.3	3.5 ±1.7	-2.4 ±1.7	50.2±3.8			0.48	2.2365	0.290	
264	73365		77.3	58.7	8.64 (220)	K0;UnK	103.6	-12.2			33.9±0.9			0.81			
	73365	73360	77.2	58.7	10.62	M0;OtH	106.5	-10.8	-2.8 ±1.7	-1.3 ±1.7	33.6±1.7	-6.0		0.33	0.0104	1.000	
265	73427		336.9	29.8	9.92 (263)	M1;UnK	-179.4	89.4			30.7±1.4			0.63			
	73427	74815	338.2	24.7	11.08	K7Ve;YnG	-190.5	75.4	13.4 ±5.8	9.4 ±7.7	29.4±3.3	-25.2		0.55	2.7945	0.110	
266	73593		19.7	57.7	7.01 (121)	G2V;BiN	-11.8	233.5			36.8±0.9	-34.7		1.10			
	73593	72681	16.2	59.7	8.39	K0;UnK	-14.0	241.8	-16.6 ±1.8	-2.6 ±1.8	45.6±3.3			0.75	1.7520	0.200	
267	73846		351.4	42.9	7.56 (155)	G0;BiN	-177.5	142.4			47.6±2.6	-5.7		0.90			
	73846	73717	351.1	43.2	7.72	G5;BiN	-165.7	138.6	-12.3 ±2.5	3.4 ±2.5	33.0±1.2	-45.4	40.0±0.3	0.87	0.3069	0.390	
268	74235		344.7	35.0	9.07 (245)	K0/K1V;BiN	-2975.6	-2165.5			28.9±1.1	311.0		0.64			kn: 74234
	74235	74234	344.7	34.9	9.44	K0V:;BiN	-2975.5	-2169.9	3.3 ±2.2	5.0 ±2.2	28.5±1.2	311.0	0.7±0.3	0.61	0.0421	1.000	
269	74268		327.9	12.3	7.01 (122)	G0+v;BiN	-38.3	-92.7			30.4±0.5	-4.4		1.09			kn: 74271

Table 4—Continued

Indx	Pri	Cmp	ℓ	b	V	Type	μ_l	μ_b	$\Delta\mu_\ell^{cor}$	$\Delta\mu_b^{cor}$	d	v_r	Δv_r^{cor}	$\mathcal{M}$	$\Delta\theta d_p$	Prob	Comment
			deg	deg	mag		mas yr^{-1}				pc	km s^{-1}		$M_\odot$	pc		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	74268	74271	327.9	12.3	7.60	G6V;BiN	-45.3	-95.8	7.0 ±1.5	3.1 ±1.4	31.1±0.6	-4.3	-0.1±0.2	0.99	0.0073	1.000	
270	74666		53.1	58.4	3.46 (8)	G8III;VaR	-113.2	-81.6			37.3±0.2	-11.9		1.61			Printseps; 49 δ Boo; kn: 7467
	74666	74674	53.1	58.4	7.80	G0Vv;BiN	-111.7	-80.7	-1.4 ±1.7	-1.0 ±1.7	37.0±1.0	-12.1	0.2±1.3	0.89	0.0190	1.000	
271	75104		49.7	57.3	6.90 (117)	F5;OtH	132.4	183.2			43.5±1.1	-27.3		1.21			
	75104	75011	50.3	57.6	9.03	K0;VaR	136.9	184.5	-1.9 ±2.1	-2.0 ±2.1	42.2±2.2	-26.2	-0.8±0.9	0.83	0.3337	1.000	
272	75132		38.9	56.5	8.99 (241)	K0;UnK	-130.0	67.0			41.3±2.2	17.9		0.82			
	75132	75124	38.9	56.6	10.91	K7;UnK	-132.9	61.7	2.9 ±3.3	5.2 ±3.4	45.9±5.1	-36.1	54.0±2.0	0.60	0.0138	1.000	
	75132	76374	44.3	53.7	11.63	K5.5;UnK	-137.9	88.9	9.0 ±2.7	-7.7 ±2.8	40.5±4.9			0.60	2.9986	0.880	
273	75206		327.3	7.7	4.99 (31)	F8V;OtH	-191.6	-32.8			35.9±0.4	-12.1		1.58			ν^{01} Lup
	75206	76990	332.2	8.2	8.72	K2.5Vk;BiN	-195.7	-17.8	10.3 ±2.2	-12.1 ±2.1	35.9±2.5	-26.0	11.2±0.3	0.80	3.0330	0.440	
274	75281		19.3	52.1	7.91 (177)	G0;OtH	-148.8	230.7			45.1±2.1	-49.0		0.87			
	75281	75978	26.6	52.0	10.81	-;UnK	-92.8	242.8	-13.7 ±2.3	0.3 ±2.2	45.0±5.3			0.52	3.5372	0.890	
275	75411		60.4	56.3	4.31 (19)	F0V;BiN	101.4	136.4			34.7±0.9	-12.1		1.87			Alkalurops; 51 μ^{01} Boo; kn: 7
	75411	75415	60.3	56.3	6.51	G1V;BiN	103.1	140.8	-1.9 ±2.9	-4.2 ±3.0	36.1±0.8	-8.8	-3.3±1.7	1.14	0.0183	1.000	51 μ^{02} Boo
276	76233		359.3	38.7	6.52 (94)	F7V;OtH	-56.8	72.9			25.6±0.3	-37.3		1.08			
	76233	78738	360.0	29.4	7.44	G8V+;BiN	-57.0	31.9	3.6 ±1.8	-9.8 ±2.0	25.3±2.2	-31.8	-6.5±0.3	0.89	4.1941	0.140	kn: 78739
277	76435		332.8	10.9	8.84 (233)	G5V;BiN	-89.8	-40.7			48.6±9.6	5.6		0.92			
	76435	76650	332.9	10.3	9.74	K3V;UnK	-82.2	-36.2	-7.7 ±1.8	-4.2 ±1.9	45.3±3.0			0.77	0.5758	1.000	
278	76793		339.4	17.8	8.83 (231)	K2.5Vk;UnK	-188.0	-7.0			33.5±2.0			0.78			
	76793	75753	337.1	19.1	10.88	K7Vk:;UnK	-187.3	0.1	-2.7 ±3.9	-8.1 ±3.5	32.5±2.7			0.54	1.5086	0.990	
279	76888		355.9	33.7	9.27 (252)	F8;UnK	26.0	-57.6			49.2±13.1			0.89			kn: 76891
	76888	75387	357.2	40.6	10.12	K3V;UnK	34.7	-45.1	-8.5 ±2.4	-6.1 ±5.9	48.9±4.7			0.74	6.0562	0.510	
280	76952		41.7	51.9	3.81 (12)	B9IV+.;BiN	26.1	114.2			44.8±1.0	-12.1		2.72			8 γ CrB
	76952	77152	45.4	51.8	8.06	G0V;SpB	23.6	92.9	10.4 ±1.5	19.7 ±1.6	44.9±1.7	-20.3	8.4±0.9	1.01	1.7490	0.190	
281	77233		26.0	47.9	3.65 (11)	A3V;BiN	-13.2	-79.1			47.6±0.6	-0.8		2.45			Chow; 28 β Ser
	77233	77083	25.5	48.2	8.20	G0;BiN	-14.0	-80.9	1.3 ±1.4	1.8 ±1.4	46.3±3.0	2.0	-2.9±4.2	0.90	0.3787	1.000	
282	78063		97.1	42.9	9.54 (257)	G5;UnK	222.8	18.6			45.6±1.9	-1.0		0.80			
	78063	77852	97.7	43.0	11.28	-;UnK	226.9	32.1	-3.9 ±3.2	-15.1 ±3.1	37.3±2.6			0.31	0.3506	0.560	
283	79881		348.6	15.4	4.80 (28)	A0V;OtH	-94.9	-45.6			41.3±0.4	-13.0		2.78			d Sco
	79881	81910	353.8	12.4	6.72	G2/G3V;OtH	-90.2	-49.2	0.4 ±1.4	2.0 ±1.4	46.4±0.9	47.9	-62.0±0.5	1.20	4.2782	0.170	
284	79958		329.5	-3.7	9.25 (251)	K3Ve;YnG	17.3	9.0			27.2±0.9	1.8		0.69			
	79958	80365	327.2	-6.9	11.18	R;UnK	-3.6	-2.0	21.5 ±6.8	11.6 ±6.8	36.6±23.0	-43.9	45.5±10.0	0.21	1.8490	0.920	
285	80218		9.7	30.2	7.34 (145)	G0;BiN	-189.4	-35.5			27.6±0.5	-20.7		0.87			
	80218	81084	6.6	24.9	11.30	K9Vkee;UnK	-182.4	-51.6	-13.0 ±2.9	-2.8 ±2.8	30.7±2.3			0.48	2.8785	0.400	
286	80448		334.6	0.1	7.33 (143)	G2V;BiN	-124.4	7.5			47.0±4.9	-4.0		0.93			
	80448	80358	335.6	1.3	9.27	G8V;OtH	-107.4	6.7	-16.7 ±2.8	1.2 ±2.9	59.8±4.8	-1.1	-3.3±14.1	0.85	1.2879	0.430	

Table 4—Continued

Indx	Pri	Cmp	ℓ	b	V	Type	μ_l	μ_b	$\Delta\mu_\ell^{cor}$	$\Delta\mu_b^{cor}$	d	v_r	Δv_r^{cor}	$\mathcal{M}$	$\Delta\theta d_p$	Prob	Comment
			deg	deg	mag		....		mas yr^{-1}	....	pc	....	km s^{-1}	$M_\odot$	pc		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
287	80628		6.7	26.7	4.62 (24)	A3m;SpB	-37.1	70.4			41.0±1.5	-33.6		1.49			3 υ Oph
	80628	78983	3.4	30.9	9.25	K4V;UnK	-46.9	80.3	-0.9 ±1.8	1.1 ±1.9	36.9±1.9			0.77	3.6186	0.940	
288	81605		60.4	41.4	8.61 (218)	G5;UnK	31.2	-29.5			44.6±1.7	-32.2		0.84			
	81605	78074	59.9	50.0	10.52	-;UnK	36.4	15.4	-6.0 ±3.8	-21.6 ±4.3	44.4±2.5			0.65	6.7098	0.240	
289	81991		23.3	30.8	6.55 (95)	G5;BiN	-328.9	69.2			45.9±1.3	-5.7		1.06			41 Her; kn: 81988
	81991	81988	23.3	30.8	10.31	K3;UnK	-328.2	73.5	-0.7 ±2.0	-4.5 ±2.0	43.4±3.2	-4.0	-1.6±5.0	0.69	0.0363	1.000	
290	82210		85.7	39.2	8.41 (200)	G0;OtH	42.5	-27.9			43.6±1.4	-0.4		0.84			
	82210	83654	87.8	36.5	8.65	G5;UnK	51.1	-29.3	-9.1 ±1.9	0.5 ±1.8	43.5±1.2			0.85	2.4038	0.870	
291	83874		349.3	2.2	7.68 (162)	G5V;OtH	-40.9	-84.3			47.3±1.7	7.6		0.99			
	83874	83415	343.5	-0.9	9.45	K1V;OtH	-39.5	-84.2	2.6 ±1.7	1.9 ±1.7	42.1±2.4	-6.8	16.3±0.3	0.78	5.4137	0.340	
	83874	83701	348.6	2.2	7.82	F8V;OtH	-39.9	-87.9	-0.6 ±1.6	3.6 ±1.6	58.3±2.6	-1.3	9.0±0.5	1.10	0.5194	0.850	
292	84182		11.7	16.6	7.57 (156)	G0;OtH	52.9	-84.6			42.9±1.1	-0.7		1.01			
	84182	83181	12.4	20.6	7.98	G0;OtH	36.1	-93.4	16.5 ±1.8	9.0 ±1.8	44.5±1.6	0.3	-2.1±0.4	0.99	3.0933	0.370	
293	84183		92.5	35.1	5.54 (44)	F0IV;OtH	43.9	-24.3			43.0±0.4	-5.0		1.36			
	84183	83654	87.8	36.5	8.65	G5;UnK	51.1	-29.3	-7.8 ±3.7	7.7 ±1.9	43.5±1.2			0.85	3.0267	0.230	
294	84253		20.8	21.5	9.92 (264)	K3V;UnK	-5.4	20.4			44.3±3.4			0.75			
	84253	87187	26.7	14.5	11.31	F;UnK	5.8	2.5	-4.4 ±5.0	10.2 ±6.2	41.4±58.0			1.27	6.9388	0.180	
295	85157		45.5	28.9	5.70 (49)	F0IV;VaR	-49.6	29.1			42.7±0.8	-19.7		1.57			73 Her
	85157	88637	47.8	19.3	7.07	G0;SpB	-48.4	11.6	2.7 ±1.3	1.5 ±1.7	39.4±2.0	-7.0	-13.8±5.1	0.94	7.2824	0.140	kn: 88624
296	85285		3.8	7.7	8.37 (198)	G4V;UnK	-33.5	-24.0			47.1±2.0			0.91			
	85285	84936	2.1	7.8	8.70	G1V;UnK	-26.2	-18.1	-8.6 ±2.4	-6.0 ±2.1	55.2±4.6			0.90	1.3184	0.700	
297	85342		341.3	-7.4	7.04 (126)	F6/F7V;OtH	8.5	-45.0			47.3±1.7	-15.9		1.23			
	85342	85326	341.3	-7.4	8.85	K1V;BiN	9.0	-38.3	-0.5 ±1.5	-6.7 ±1.5	48.3±4.7	-16.6	0.7±0.8	0.85	0.0292	1.000	
298	85620		93.4	33.1	7.66 (161)	F9V;OtH	-184.5	15.5			45.2±1.0	-34.3		0.98			
	85620	85575	93.4	33.2	8.42	G0;UnK	-179.9	16.2	-4.5 ±1.7	-0.5 ±1.7	45.2±1.1			0.87	0.0423	1.000	
299	85829		83.0	33.1	4.86 (29)	A4m;SpB	155.9	-9.1			30.5±0.2	-16.7		1.71			Kuma; 25 ν 02 Dra; kn: 85819
	85829	85819	83.0	33.1	4.89	A6V;BiN	162.8	-9.2	-7.0 ±4.8	0.1 ±5.1	30.2±0.1	-15.2	-1.5±5.1	1.52	0.0091	1.000	24 ν^{01} Dra
300	87207		11.3	5.9	9.02 (242)	K1V;BiN	-32.7	-14.4			41.5±2.8	6.0		0.82			
	87207	85246	1.3	6.2	9.80	G;UnK	-23.0	-13.1	-3.7 ±2.6	-2.0 ±2.6	53.9±5.3			0.80	7.2222	0.620	
301	88062		93.6	29.9	7.68 (163)	F2;BiN	12.0	-9.3			44.1±5.5	33.0		0.97			
	88062	87594	90.0	30.4	7.88	F8;BiN	27.6	-8.1	-6.7 ±4.2	-2.2 ±3.1	49.8±1.2	-33.9	66.7±10.0	0.97	2.4369	0.130	
302	88178		338.9	-14.8	8.48 (205)	G5V;OtH	-93.1	-11.2			47.6±2.1	17.9		0.88			
	88178	88663	343.9	-13.4	9.67	G5;UnK	-100.1	-6.7	1.0 ±2.0	-8.4 ±2.0	53.4±4.9			0.81	4.1955	0.430	
303	88724		33.6	12.8	7.77 (168)	G5;OtH	-41.5	-17.5			46.1±2.0	-5.8		0.99			
	88724	87769	37.4	17.6	8.43	G5;OtH	-37.0	-22.6	-3.0 ±2.2	8.1 ±2.2	56.4±2.8	9.0	-15.7±0.3	0.91	4.8592	0.130	
304	88961		27.8	9.2	8.93 (239)	K3V;UnK	24.6	-74.5			29.9±0.9			0.76			

Table 4—Continued

Indx	Pri	Cmp	ℓ	b	V	Type	μ_l	μ_b	$\Delta\mu_\ell^{cor}$	$\Delta\mu_b^{cor}$	d	v_r	Δv_r^{cor}	$\mathcal{M}$	$\Delta\theta d_p$	Prob	Comment
			deg	deg	mag		....	mas yr^{-1}	....		pc	.... km s^{-1}	....	$M_\odot$	pc		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	88961	90035	31.1	7.3	10.12	K7V;UnK	19.8	-83.9	9.0 ±4.4	6.4 ±3.0	26.8±1.2			0.62	1.9757	0.230	
305	88963		18.5	4.2	8.83 (232)	G5;UnK	-34.3	-14.0			40.0±1.9			0.83			
	88963	87207	11.3	5.9	9.02	K1V;BiN	-32.7	-14.4	-8.8 ±6.8	1.7 ±2.3	41.5±2.8	6.0		0.82	5.1448	0.720	
306	90355		37.9	9.6	7.83 (172)	G7V;SpB	-504.7	-26.3			28.9±1.2	-19.2		0.85			kn: 90365
	90355	90365	37.8	9.5	8.32	G9V;BiN	-505.7	-30.7	0.7 ±2.5	3.9 ±2.5	36.7±1.3	-18.3	-0.7±0.4	0.84	0.0852	1.000	
307	91926		68.8	18.2	4.59 (23)	A5;BiN	53.4	11.9			47.7±1.1	-29.0		1.03			5 ϵ^{02} Lyr C; kn: 91919
	91926	91919	68.8	18.2	4.67	A3;BiN	61.0	11.0	-7.5 ±2.1	1.0 ±2.1	49.8±1.9	-31.2	2.2±3.8	1.30	0.0481	1.000	4 ϵ^{02} Lyr A
308	91971		66.9	17.4	4.34 (21)	Am;SpB	31.3	-14.4			47.9±0.4	-24.9		1.26			6 ζ 01 Lyr; kn: 91973
	91971	91973	66.8	17.4	5.73	F0IVv;BiN	27.0	-10.7	4.3 ±2.3	-3.8 ±2.3	47.7±0.5	-25.0	0.1±2.5	1.73	0.0102	1.000	7 ζ 02 Lyr
309	92388		44.5	6.4	8.59 (217)	G5;OtH	-286.5	79.8			36.6±1.1	-54.3		0.85			
	92388	92638	43.1	4.9	10.34	K5;UnK	-285.6	68.6	-9.0 ±1.8	2.3 ±1.9	39.9±2.8			0.35	1.3595	0.990	
310	93506		6.8	-15.4	2.60 (6)	A2.5Va;BiN	-17.8	2.7			27.0±0.6	24.1		2.52			Ascella; 38 ζ Sgr
	93506	93449	359.9	-17.9	11.57	A5IIev;BiN	9.1	33.8	-4.8 ±26.9	-22.6 ±40.8	24.4±16.7	-36.0	60.2±4.1	0.32	3.3385	0.130	
311	93743		33.2	-3.8	6.51 (91)	F1V;OtH	2.1	19.7			43.8±0.9	-32.5		1.38			
	93743	93722	28.1	-6.3	10.04	-;UnK	3.8	-4.8	-15.5 ±4.0	17.8 ±3.4	49.0±25.9			0.62	4.3068	0.320	
312	93797		39.3	-0.8	9.58 (259)	K2;UnK	-149.6	-120.6			35.9±3.2			0.73			
	93797	95429	44.3	-3.4	11.19	-;UnK	-154.5	-131.5	11.2 ±6.8	7.4 ±5.2	33.0±3.6			0.80	3.5444	0.210	
313	94114		359.5	-19.6	4.11 (15)	A2Va;OtH	-63.8	-113.4			38.4±0.4	-18.4		2.63			Alfecca Meridiana; α CrA
	94114	94326	358.1	-20.6	8.80	G5V;OtH	-70.2	-117.3	3.1 ±1.8	2.8 ±1.7	45.5±2.9	-48.5	30.7±1.2	0.86	1.1188	0.270	
	94114	94863	359.7	-21.4	8.46	G8Ve:;YnG	-54.8	-123.1	-8.7 ±1.9	6.6 ±2.1	41.9±1.4	-19.8	2.0±1.2	0.86	1.1965	0.100	
314	94150		327.2	-26.8	5.31 (40)	G9III-;OtH	-24.7	-158.9			37.4±0.5	-9.9		1.13			
	94150	94154	327.3	-26.8	7.53	G1VH-0;OtH	-24.8	-158.5	0.4 ±1.6	-0.5 ±1.6	35.9±0.9	-9.7	-0.2±1.2	0.90	0.0814	1.000	
315	94326		358.1	-20.6	8.80 (230)	G5V;OtH	-70.2	-117.3			45.5±2.9	-48.5		0.86			
	94326	94275	0.4	-19.7	9.09	K0V;BiN	-77.0	-103.1	16.8 ±2.0	-11.7 ±1.9	50.0±3.0	-24.4	-25.0±0.6	0.86	1.8187	0.140	
316	94863		359.7	-21.4	8.46 (204)	G8Ve:;YnG	-54.8	-123.1			41.9±1.4	-19.8		0.86			
	94863	94326	358.1	-20.6	8.80	G5V;OtH	-70.2	-117.3	11.6 ±2.3	-3.9 ±2.4	45.5±2.9	-48.5	28.6±0.4	0.86	1.2078	0.860	
317	94905		50.7	1.6	7.01 (123)	F8IV-V;SpB	-23.7	22.1			37.5±0.8	-13.1		1.03			
	94905	96184	58.5	1.9	7.81	G0;OtH	-16.0	25.0	2.6 ±5.8	-2.4 ±1.5	43.9±1.7	-27.3	13.8±7.2	1.12	5.1077	0.170	
318	95730		48.3	-2.3	9.17 (247)	K2;BiN	-62.0	27.8			28.0±1.1	-16.8		0.69			
	95730	96339	45.5	-5.7	10.38	K5V;UnK	-66.6	11.3	-1.4 ±3.0	9.2 ±3.1	27.5±3.5	-13.6	-3.0±10.1	0.46	2.1561	0.850	
319	95795		348.1	-26.3	8.87 (235)	K0V;OtH	-260.8	-2.9			43.6±2.1	-34.8		0.84			
	95795	96725	350.3	-27.6	9.04	K1V;BiN	-246.4	-13.4	-8.2 ±1.7	1.7 ±1.8	45.5±3.2	-20.4	-16.2±1.5	0.82	1.8525	0.940	
320	95864		1.8	-23.2	9.03 (243)	G6V;OtH	-21.1	15.0			45.6±3.7	-7.6		0.84			
	95864	96374	2.2	-24.2	9.42	G8V;OtH	-8.5	1.8	-12.5 ±2.0	12.4 ±2.0	54.0±5.1	15.8	-23.5±0.4	0.93	0.9183	0.120	
321	97370		356.0	-28.0	7.12 (129)	F9.5V;BiN	-93.2	78.7			38.7±1.9	36.7		1.01			
	97370	99344	347.0	-32.9	8.38	G7V;OtH	-59.1	110.3	0.6 ±2.3	-8.4 ±1.8	39.2±1.7	72.5	-35.3±1.3	0.81	6.1978	0.310	

Table 4—Continued

Indx	Pri	Cmp	ℓ	b	V	Type	μ_l	μ_b	$\Delta\mu_\ell^{cor}$	$\Delta\mu_b^{cor}$	d	v_r	Δv_r^{cor}	$\mathcal{M}$	$\Delta\theta d_p$	Prob	Comment
			deg	deg	mag		....	.... mas yr^{-1}	....		pc	.... km s^{-1}		$M_\odot$	pc		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
322	97384		40.4	-11.9	6.77 (106)	G5;SpB	-216.5	-79.2			48.3±1.4	11.2		1.21			
	97384	95829	37.8	-8.2	10.73	K5;UnK	-222.7	-85.1	7.9 ±1.8	4.3 ±1.8	48.0±5.3			0.61	3.8437	0.900	
323	97940		42.0	-13.0	8.78 (227)	K0;BiN	-240.4	-126.8			45.1±2.9	9.6		0.86			kn: 97950
	97940	97950	42.0	-13.1	8.93	K0;OtH	-237.7	-127.6	-2.7 ±1.5	0.8 ±1.5	42.7±3.4	7.3	2.3±2.8	0.83	0.0354	1.000	
324	98879		55.6	-8.3	7.33 (144)	G0V;BiN	59.8	3.6			41.2±0.9	5.4		1.04			
	98879	96976	46.3	-7.4	8.70	F8;BiN	58.3	2.2	5.2 ±3.3	-0.4 ±3.4	51.2±28.3	-41.6	45.1±0.4	0.99	6.6524	0.340	
325	99171		41.3	-17.3	5.97 (61)	K1IV;OtH	-4.3	-135.2			46.9±1.0	-2.5		1.04			64 Aql
	99171	99100	41.0	-17.2	8.26	G5;OtH	-7.8	-133.9	3.3 ±1.3	-1.2 ±1.3	42.7±1.7	-3.5	1.0±0.5	0.89	0.2410	0.980	
326	99572		30.4	-23.6	5.84 (54)	F5V;BiN	-98.6	-257.0			27.7±0.3	27.1		1.19			2 χ Cap
	99572	99550	30.1	-23.6	11.30	M0Vk;UnK	-99.5	-259.6	1.4 ±2.6	3.1 ±2.6	23.6±1.6			0.50	0.1371	1.000	
327	99655		91.1	12.1	4.28 (17)	A3IV-V;VaR	102.6	-10.3			48.8±0.3	-18.0		2.21			33 Cyg
	99655	99241	85.5	9.5	7.40	G0;OtH	98.0	-12.0	-3.1 ±1.7	-0.1 ±1.4	45.3±0.9	-8.9	-11.2±2.5	0.99	5.1314	0.390	
328	99889		81.9	5.8	5.87 (55)	F5V:;OtH	-40.7	-34.7			34.3±0.3	-44.1		1.36			
	99889	99880	79.7	4.4	9.98	K7;VaR	-45.2	-44.6	-5.7 ±2.0	3.0 ±2.1	24.6±0.7	15.5	-59.2±1.1	0.62	1.5549	0.280	
329	99926		6.5	-31.8	6.55 (96)	F2V;OtH	52.1	10.7			44.7±1.0	-8.0		1.36			
	99926	99642	5.1	-31.4	9.48	K1/K2V;OtH	29.7	6.4	21.7 ±1.9	3.9 ±1.8	41.8±2.6	0.8	-9.0±3.7	0.78	0.9915	0.630	
330	100072		38.8	-21.4	7.27 (141)	F8;OtH	-31.8	13.8			39.7±1.0	15.9		0.99			
	100072	99587	33.9	-22.1	10.61	K4.5;UnK	-27.5	13.7	2.9 ±2.6	2.0 ±2.5	50.9±5.2			0.57	3.1517	0.120	
331	100896		42.4	-22.2	6.71 (102)	F8;SpB	-91.7	24.2			45.8±1.2	-15.4		1.28			kn: 100895
	100896	100895	42.4	-22.2	7.49	F8;BiN	-91.0	20.5	-0.8 ±1.6	3.7 ±1.6	46.9±1.3	-15.3	-0.1±0.2	1.10	0.0133	1.000	
332	101587		349.5	-36.9	9.21 (250)	G8V;OtH	-131.9	-119.6			47.8±5.1	-59.7		0.82			
	101587	106546	348.3	-46.4	11.13	K7;UnK	-139.3	-158.8	1.7 ±2.6	-1.0 ±5.4	40.7±4.8			0.61	8.0041	0.400	
333	101852		41.5	-25.8	7.78 (169)	G0;BiN	-7.1	4.8			43.4±1.5	5.5		1.07			
	101852	100940	44.3	-21.4	10.75	-;UnK	-9.3	1.2	0.9 ±14.6	1.5 ±15.9	40.2±22.8			0.27	3.8401	0.990	
334	101916		55.2	-18.5	5.07 (33)	G5IV+.;BiN	194.2	-258.0			30.1±0.3	-54.0		1.46			7 κ Del; kn: 101932
	101916	101932	55.2	-18.5	8.52	K2V;OtH	191.0	-254.8	3.4 ±1.8	-3.5 ±1.7	28.7±0.7	-52.9	-1.1±1.2	0.79	0.0313	1.000	
335	102532		61.5	-16.6	4.27 (16)	K1IV;BiN	-179.2	-90.5			38.7±2.0	-6.4		1.36			12 γ 02 Del; kn: 102531
	102532	104815	64.7	-22.6	10.33	K3;UnK	-178.1	-98.7	2.6 ±1.8	1.2 ±1.8	49.1±4.0			0.72	4.5372	0.650	
336	102805		58.9	-19.2	6.01 (63)	F5V;BiN	110.9	10.8			30.6±0.4	4.4		1.14			15 Del
	102805	101966	56.3	-18.0	6.39	F8IV:;BiN	104.0	1.2	8.2 ±1.5	7.4 ±1.5	33.5±0.5	-33.2	36.9±0.7	1.01	1.4521	0.140	
337	103641		82.6	-3.8	6.58 (97)	F8;SpB	311.7	-35.5			41.0±0.9	-36.1		1.09			
	103641	103502	82.3	-3.6	10.75	M1;UnK	305.0	-42.4	5.9 ±1.7	7.4 ±1.7	43.9±4.0			0.63	0.2409	1.000	
338	103896		28.6	-37.4	8.55 (216)	G5V;OtH	-161.7	120.8			46.7±2.4	39.7		0.85			
	103896	107068	33.4	-45.6	10.74	-;UnK	-174.8	138.1	-4.5 ±3.0	-3.0 ±3.1	54.3±7.5			0.67	7.3265	0.110	
339	104687		34.7	-37.9	7.44 (148)	G5;BiN	-0.8	-54.8			49.3±2.6	-21.6		1.04			
	104687	102130	35.5	-29.4	8.02	G0;BiN	0.4	-29.0	0.2 ±2.1	-11.6 ±2.2	53.9±2.8	8.1	-31.3±0.9	1.09	7.2973	0.160	

Table 4—Continued

Indx	Pri	Cmp	ℓ	b	V	Type	μ_l	μ_b	$\Delta\mu_\ell^{cor}$	$\Delta\mu_b^{cor}$	d	v_r	Δv_r^{cor}	$\mathcal{M}$	$\Delta\theta d_p$	Prob	Comment
			deg	deg	mag		.... mas yr^{-1}			....	pc	.....km s^{-1}.....		$M_\odot$	pc		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
340	105388		344.2	-43.6	8.65 (223)	G7V;YnG	-100.8	-8.6			43.0±1.8	-1.6		0.85			
	105388	105404	344.9	-43.7	8.89	G9V;EcB	-106.4	-13.5	5.7 ±2.6	3.9 ±2.1	45.1±2.9	19.5	-21.3±7.7	0.84	0.4178	0.980	
	105388	107345	332.3	-44.0	11.72	M0Ve;YnG	-99.9	3.8	-1.1 ±2.4	2.1 ±2.7	43.6±4.9	2.3	-0.8±10.0	0.52	6.4230	0.850	
341	105431		61.9	-26.8	6.72 (103)	F5;SpB	-5.3	-55.4			47.9±1.7	-18.9		1.18			
	105431	105200	62.5	-25.5	7.01	G0V;SpB	-26.1	-55.4	21.8 ±1.8	1.9 ±1.8	47.7±1.3	6.6	-25.8±34.9	1.15	1.1804	0.420	
342	106353		29.5	-44.4	8.45 (203)	K2V;UnK	-204.6	227.3			26.9±0.8	40.0		0.80			kn: 106350
	106353	106350	29.4	-44.4	11.39	M0+v;UnK	-209.3	236.9	4.8 ±2.4	-9.6 ±3.5	34.4±3.7			0.30	0.0073	1.000	
343	106907		11.7	-48.4	6.28 (76)	G8IV;UnK	-36.3	-73.3			45.0±0.9	-19.5		1.02			
	106907	109149	10.9	-54.1	10.26	K3V;UnK	-30.1	-64.4	-7.9 ±2.3	-17.2 ±2.3	47.3±4.3			0.72	4.5030	0.120	
344	107299		337.1	-45.4	6.49 (89)	F7IV/V;BiN	-4.1	126.4			45.5±0.9	37.1		1.15			kn: 107300, 107277
	107299	107300	337.1	-45.4	6.86	F6IV/V;BiN	-7.0	124.7	2.7 ±1.9	1.7 ±2.1	45.3±1.0	37.0	0.1±0.4	1.11	0.0336	1.000	kn: 107277
345	107806		335.3	-45.8	7.89 (176)	G6V;BiN	-104.9	-5.4			41.5±1.8	12.9		0.91			
	107806	107345	332.3	-44.0	11.72	M0Ve;YnG	-99.9	3.8	-2.7 ±2.1	-7.5 ±2.6	43.6±4.9	2.3	11.3±10.0	0.52	2.0098	0.300	
346	107868		65.6	-33.8	8.51 (209)	G5;BiN	75.3	-67.9			49.7±4.6	-30.3		1.07			
	107868	107181	58.4	-35.7	11.37	-;UnK	47.8	-85.6	8.8 ±3.0	8.6 ±2.7	50.3±8.1			0.60	5.3670	0.410	
347	107947		330.4	-44.3	7.22 (137)	F6V;OtH	-100.1	5.0			45.3±1.4	1.4		1.10			
	107947	105388	344.2	-43.6	8.65	G7V;YnG	-100.8	-8.6	1.6 ±2.2	-3.1 ±2.0	43.0±1.8	-1.6	-0.7±0.6	0.85	7.8589	0.100	
	107947	107345	332.3	-44.0	11.72	M0Ve;YnG	-99.9	3.8	-0.4 ±2.2	-1.2 ±2.6	43.6±4.9	2.3	-1.4±10.0	0.52	1.1158	1.000	
348	108195		330.4	-44.7	5.92 (57)	F1III;BiN	-99.3	4.8			46.5±0.9	1.0		1.47			
	108195	107345	332.3	-44.0	11.72	M0Ve;YnG	-99.9	3.8	0.4 ±2.2	-1.3 ±2.6	43.6±4.9	2.3	-1.8±10.4	0.52	1.2717	1.000	
	108195	107947	330.4	-44.3	7.22	F6V;OtH	-100.1	5.0	0.8 ±1.8	-0.2 ±1.8	45.3±1.4	1.4	-0.4±3.1	1.10	0.3183	1.000	
349	108859		76.8	-28.5	7.65 (160)	G0V;OtH	10.9	-32.3			49.6±2.0	-14.9		1.02			
	108859	109490	75.8	-32.1	8.02	F8V;OtH	4.8	-32.6	4.9 ±1.4	-3.7 ±1.4	45.1±1.6	-0.6	-13.8±0.3	0.93	3.1745	0.110	
350	108912		331.5	-46.3	7.87 (174)	G2V;YnG	-51.7	-91.8			41.3±1.5	-2.4		0.91			
	108912	108594	329.7	-45.1	11.97	M2;UnK	-54.7	-74.5	0.8 ±9.3	-15.9 ±9.8	40.7±4.9			0.50	1.2472	0.630	
351	109918		38.7	-53.1	9.66 (261)	K2V;UnK	-89.6	-207.5			47.3±3.3			0.79			
	109918	110620	50.0	-52.2	10.80	K7;UnK	-45.1	-219.7	-9.7 ±6.0	1.1 ±3.0	50.9±5.7			0.63	5.7018	0.140	
352	110084		14.3	-56.4	8.61 (219)	G6V;OtH	-198.9	-169.0			45.1±1.8	-77.8		0.87			
	110084	111520	23.0	-60.0	10.23	K5V;UnK	-140.7	-209.1	-4.1 ±2.9	-4.8 ±2.9	45.3±4.5			0.63	4.5585	0.980	
353	110341		71.6	-39.3	6.18 (72)	F6V;OtH	42.8	-13.4			30.9±0.5	8.2		1.18			
	110341	111276	73.7	-41.8	9.40	F0;BiN	36.4	-12.2	5.1 ±3.1	2.3 ±3.1	33.6±8.2	3.7	4.7±0.6	1.25	1.6123	0.920	
354	111045		24.7	-58.6	5.95 (59)	F1V;BiN	5.1	-116.5			39.9±2.2	3.2		1.42			
	111045	112524	31.2	-62.1	10.03	K4Vk:;UnK	11.8	-99.8	3.6 ±2.1	-14.4 ±2.1	38.2±2.2			0.62	3.2971	0.370	
355	111276		73.7	-41.8	9.40 (255)	F0;BiN	36.4	-12.2			33.6±8.2	3.7		1.25			
	111276	111861	75.2	-43.1	10.72	F8;UnK	22.3	-23.2	13.8 ±3.7	12.2 ±3.7	45.1±49.4			1.05	1.0170	0.110	
356	111566		321.0	-45.2	9.62 (260)	M2;UnK	21.1	281.5			29.5±1.2			0.64			

Table 4—Continued

Indx	Pri	Cmp	ℓ	b	V	Type	μ_l	μ_b	$\Delta\mu_\ell^{cor}$	$\Delta\mu_b^{cor}$	d	v_r	Δv_r^{cor}	$\mathcal{M}$	$\Delta\theta d_p$	Prob	Comment
			deg	deg	mag			............mas yr^{-1}	....		pc	....km s^{-1}....		$M_\odot$	pc		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	111566	111686	320.6	-45.1	9.77	M2;UnK	19.8	283.6	2.5 ±2.5	-2.1 ±2.5	30.0±1.4			0.64	0.1148	1.000	
357	112219		92.6	-25.1	7.99 (181)	G5V;OtH	219.4	-103.3			45.4±2.2	-10.2		1.01			
	112219	113302	95.0	-27.1	10.38	K5;UnK	228.3	-102.9	-5.5 ±2.2	2.3 ±2.1	37.5±2.3			0.63	2.2891	0.610	
358	112222		79.5	-40.9	6.51 (92)	G8IV;BiN	-91.6	-131.6			42.4±3.0	-2.2		1.21			
	112222	112354	80.2	-41.0	9.81	K6V:;BiN	-96.1	-144.8	5.6 ±2.1	12.6 ±2.1	41.6±2.8	3.9	-6.2±1.2	0.68	0.3693	1.000	
359	112724		111.1	6.2	3.50 (9)	K0III;VaR	-115.2	-81.0			35.3±0.1	-12.7		1.35			Alvahet; 32 ι Cep
	112724	112324	106.9	-0.7	6.45	F5;OtH	-119.3	-92.3	-0.4 ±1.2	2.9 ±1.3	35.4±0.4	-10.1	0.6±0.4	1.18	4.9793	0.990	
360	112974		58.6	-57.3	6.74 (105)	F8V;OtH	150.1	-200.0			39.2±1.1	-16.6		1.19			
	112974	113026	60.3	-56.8	9.59	K5;UnK	156.0	-184.7	0.1 ±1.5	-11.0 ±1.5	34.5±1.8			0.69	0.6690	0.250	
361	113044		341.7	-58.7	6.03 (66)	G0V;OtH	-185.8	-140.0			32.6±0.4	-1.1		1.17			tau01 Gru
	113044	110066	346.5	-53.4	8.40	K2.5Vk;UnK	-173.5	-153.0	-1.4 ±1.3	2.2 ±1.4	25.2±0.6			0.77	3.3823	0.140	
362	113190		341.6	-59.0	6.67 (100)	F7V:;BiN	169.9	159.8			44.5±0.9	0.7		1.22			kn: 113191
	113190	113191	341.6	-59.0	7.04	G5;BiN	170.5	156.5	-0.7 ±1.4	3.3 ±1.4	47.7±1.9	0.9	-0.2±0.4	1.06	0.0202	1.000	
363	113280		87.6	-37.4	8.90 (236)	K0;BiN	83.8	-268.3			34.2±1.5	-9.4		0.77			
	113280	113698	94.0	-30.8	9.77	K2;UnK	109.0	-256.5	-2.5 ±1.7	2.0 ±1.7	48.8±3.2			0.77	5.0217	0.140	
364	113579		28.8	-65.2	7.47 (152)	G5V;YnG	-144.2	-131.3			30.8±0.7	6.1		0.87			
	113579	113597	28.4	-65.3	9.57	K7V;BiN	-151.4	-136.1	6.5 ±3.1	5.7 ±3.4	30.5±1.9	14.0	-7.8±3.8	0.57	0.0866	1.000	
365	113697		346.5	-61.8	8.93 (240)	K3+v;UnK	-56.9	-102.6			28.7±2.3			0.74			
	113697	111755	351.6	-58.4	10.42	K7;UnK	-43.0	-109.9	-6.3 ±3.7	2.4 ±4.9	42.2±3.6			0.57	2.1183	0.210	
366	114131		348.2	-63.3	4.28 (18)	F5me..;BiN	13.0	47.6			40.4±0.7	11.0		1.84			θ Gru; kn: 114112
	114131	114112	348.3	-63.3	7.67	G2V;BiN	2.1	51.8	10.8 ±2.4	-4.2 ±2.5	39.9±1.0	15.1	-4.1±1.7	0.95	0.0313	1.000	
367	114702		66.7	-60.7	7.55 (154)	F9V;BiN	339.0	-442.4			39.1±1.9	-30.3		0.94			kn: 114703
	114702	113231	62.7	-56.5	8.01	G6V;BiN	307.1	-459.6	-1.3 ±1.6	11.5 ±1.7	36.7±1.5	-27.5	-11.0±1.7	0.87	3.1745	0.180	
368	114986		316.4	-47.7	8.71 (224)	K3.5V;BiN	-522.6	161.2			28.8±0.8	67.1		0.75			kn: 114980
	114986	114980	316.4	-47.7	9.02	K4Vk;BiN	-517.5	157.9	-5.0 ±2.1	3.3 ±2.0	28.2±0.9	66.4	0.7±0.2	0.67	0.0098	1.000	
369	115473		107.3	-14.4	9.30 (253)	K8;BiN	168.9	-72.7			43.8±4.3	-49.7		0.74			
	115473	115277	104.6	-19.9	9.38	K2;UnK	150.6	-105.7	6.2 ±3.0	7.9 ±5.4	40.2±2.0			0.77	4.6318	0.320	
370	115547		311.9	-43.4	6.88 (114)	G0V;OtH	-3.8	47.7			41.9±0.6	19.6		1.04			
	115547	1779	305.8	-43.9	8.59	G8V;OtH	0.4	46.8	6.9 ±1.8	1.6 ±1.8	43.7±1.5	36.8	-17.3±0.3	0.87	3.2405	0.210	
371	115803		8.0	-70.8	7.51 (153)	F7V;OtH	-51.1	238.4			48.6±2.1	18.6		1.08			
	115803	117627	354.3	-74.4	7.85	G6V;OtH	11.5	245.8	-1.5 ±1.8	2.0 ±2.0	62.4±2.7	14.3	1.1±0.3	0.96	4.6085	0.470	
372	116277		98.0	-41.2	6.81 (111)	G2IV;BiN	245.0	-78.8			48.2±1.1	-7.1		1.11			
	116277	117918	105.4	-40.6	8.94	G5;UnK	265.1	-64.3	-12.4 ±1.5	7.0 ±1.4	47.9±2.3	-24.4	22.7±2.1	0.85	4.7839	0.100	
373	116616		110.7	-12.1	7.11 (128)	G0;OtH	153.8	-171.8			49.1±1.5	-44.2		1.13			
	116616	117397	111.9	-14.4	9.84	K0III;UnK	163.5	-188.9	-5.2 ±1.8	10.4 ±1.9	54.8±4.8			0.77	2.1964	0.280	
374	117066		305.6	-34.3	7.68 (164)	G1V;OtH	94.6	126.4			39.6±0.8	27.8		1.01			

Table 4—Continued

Indx	Pri	Cmp	ℓ	b	V	Type	μ_l	μ_b	$\Delta\mu_\ell^{cor}$	$\Delta\mu_b^{cor}$	d	v_r	Δv_r^{cor}	$\mathcal{M}$	$\Delta\theta d_p$	Prob	Comment
			deg	deg	mag		............mas yr^{-1}............				pc	... km s^{-1} ...		$M_\odot$	pc		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	117066	9400	299.5	-36.1	8.93	K1V;OtH	110.3	113.8	4.4 ±1.7	10.7 ±1.8	42.3±1.4	30.4	-5.1±0.3	0.91	3.6774	0.110	
375	117958		55.8	-75.8	7.88 (175)	G1V;BiN	20.2	4.7			42.2±1.5	14.8		0.92			
	117958	117905	61.6	-74.8	8.86	G6V;UnK	8.9	-3.7	8.9 ±2.0	8.9 ±2.0	44.0±2.4			0.88	1.3480	0.790	
376	118254		112.5	-20.6	7.72 (166)	G0;BiN	79.9	-11.1			44.3±1.3	29.7		0.83			
	118254	118251	112.4	-20.6	8.16	G0;UnK	81.1	-13.4	-1.2 ±1.6	2.3 ±1.6	41.9±1.1			0.90	0.0247	1.000	

Table 5. Candidate Companions for 464 Candidate Primaries between 50 and 100 pc.

Indx	Pri	Cmp	ℓ	b	V	Type	μ_l	μ_b	$\Delta\mu_\ell^{cor}$	$\Delta\mu_b^{cor}$	d	v_r	Δv_r^{cor}	$\mathcal{M}$	$\Delta\theta d_p$	Prob	Comment
			deg	deg	mag		............mas yr^{-1}............				pc	.... km s^{-1}		$M_\odot$	pc		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
377	185		103.9	-50.3	8.53 (372)	F8;BiN	-78.4	-100.3			77.4±5.5	-7.0		1.11			kn: 190
	185	190	103.9	-50.3	8.74	G0;BiN	-80.3	-97.6	2.0 ±1.8	-2.7 ±1.8	87.5±7.1	-6.0	-1.0±6.4	1.00	0.0239	1.000	
378	201		107.1	-42.7	8.24 (320)	F5;OtH	-13.0	23.3			92.2±8.9	-17.6		1.24			
	201	206	107.2	-42.5	8.56	G0;UnK	-11.2	23.7	-1.7 ±1.6	-0.3 ±1.5	99.9±9.6			1.25	0.2458	1.000	
379	301		72.1	-75.3	4.55 (9)	B9IVn;OtH	-59.2	-33.0			83.5±1.8	8.0		3.01			2 Cet
	301	117821	52.6	-75.8	9.81	F6/F7V;UnK	-63.6	-13.6	-1.1 ±7.9	1.5 ±7.4	98.3±23.2			0.95	7.1270	0.210	
380	792		95.1	-67.4	8.43 (350)	G5;UnK	42.1	-40.3			88.0±8.0	24.2		0.97			
	792	976	96.2	-67.9	8.66	F5;UnK	37.3	-41.4	5.1 ±1.6	2.3 ±1.7	95.8±8.6			1.22	0.9481	0.420	
381	1266		96.5	-69.9	9.05 (433)	G0;UnK	44.3	-9.2			87.9±9.5			1.02			
	1266	118	86.9	-68.7	9.20	G0;UnK	40.2	-21.9	2.8 ±2.1	5.6 ±1.7	77.6±7.3			0.95	5.4860	1.000	
382	1684		104.9	-64.7	6.92 (139)	K0;UnK	85.8	-19.2			80.9±3.8			1.14			
	1684	2713	112.0	-67.1	7.02	G7III;BiN	84.3	-9.9	2.2 ±1.9	1.1 ±1.7	77.5±10.4	2.3		1.30	5.2640	0.100	kn: 2715
383	1891		115.8	-33.0	8.25 (321)	G;UnK	42.7	-7.7			84.6±7.5			1.14			kn: 1887
	1891	1887	115.8	-33.0	8.48	G;UnK	38.3	-3.8	4.3 ±1.7	-3.9 ±1.6	71.9±4.9			1.01	0.0135	1.000	
384	2292		108.0	-68.1	7.78 (245)	G0;OtH	-159.0	-190.5			56.7±2.5	9.6		1.04			
	2292	2350	108.5	-68.0	9.44	G5;OtH	-155.3	-194.6	-2.0 ±1.8	2.7 ±1.9	49.9±3.7	9.5	-0.1±0.4	0.82	0.2308	0.990	
385	2487		306.8	-54.0	4.53 (8)	A2V+..;BiN	-100.5	35.7			51.7±7.9	9.8		1.35			β^{02} Tuc
	2487	1910	308.4	-54.7	11.33	M0Ve;BiN	-92.8	39.0	-9.1 ±7.0	-5.2 ±6.5	53.0±7.6	6.6	2.7±10.0	0.53	1.0426	0.470	
	2487	2578	306.5	-54.0	5.07	A0V;BiN	-92.8	40.4	-7.4 ±1.5	-4.3 ±1.5	45.6±0.4	5.0	4.9±1.3	2.64	0.1340	0.250	β^{03} Tuc
386	2939		322.0	-81.2	8.27 (325)	G3V;OtH	-55.6	-27.8			85.8±6.2	-10.2		1.23			
	2939	2574	327.5	-80.8	8.90	G5V;UnK	-61.3	-34.4	8.9 ±1.6	1.6 ±1.6	81.2±7.4			0.91	1.4128	0.130	
387	3572		122.5	12.1	5.64 (46)	A2IV;EcB	-15.5	-22.6			93.0±2.0	8.1		2.42			21 YZ Cas
	3572	6347	125.0	11.8	7.19	A2;UnK	-13.1	-24.0	-3.3 ±1.3	1.6 ±1.3	91.1±3.2			1.62	3.8741	0.310	
388	3675		121.2	-50.9	5.51 (40)	G8II;OtH	53.3	-36.1			86.8±3.4	-0.8		1.61			58 Psc
	3675	3963	122.7	-54.8	8.12	F8;UnK	54.9	-34.7	-0.8 ±1.4	-0.3 ±1.5	96.5±8.6			1.26	6.1263	0.230	
389	4005		122.9	-30.2	7.28 (178)	F8;OtH	-102.3	-86.4			53.3±2.1	5.9		1.15			
	4005	5682	128.1	-29.5	7.41	F5;OtH	-100.5	-89.1	0.7 ±1.7	-2.1 ±1.6	57.9±2.4	-21.1	24.7±0.4	1.11	4.2473	0.410	
390	4084		302.8	-47.6	6.67 (112)	F7IV-V;BiN	-4.3	70.3			63.3±5.6	29.5		1.41			λ^{01} Tuc; kn: 4088
	4084	4088	302.8	-47.6	7.56	G1V;BiN	-1.6	72.6	-2.7 ±2.7	-2.3 ±2.6	57.1±17.8	29.4	0.1±0.3	1.06	0.0063	1.000	
391	4318		123.3	1.7	7.59 (221)	A3;OtH	-15.6	-11.5			94.4±5.0	12.0		1.59			
	4318	4963	124.3	0.8	8.14	G0;BiN	-25.4	-6.9	9.3 ±2.0	-4.2 ±2.1	91.3±9.8	-9.5	21.5±2.3	1.04	2.0656	0.150	
392	4702		138.4	-82.0	8.01 (277)	G3V;OtH	137.7	-21.7			74.7±5.1	4.8		1.12			
	4702	4833	141.7	-82.2	8.27	G3V;OtH	138.3	-13.5	0.3 ±1.9	-0.4 ±1.9	86.9±6.5	5.0	0.2±0.4	1.10	0.6248	1.000	
393	4852		275.1	-85.0	5.50 (38)	A2V;VaR	-78.2	25.9			71.2±1.6	-9.1		1.60			σ Scl
	4852	4663	279.4	-85.5	9.23	G5VCNv;UnK	-73.6	26.9	-6.1 ±1.6	-7.1 ±1.6	78.7±7.6	-43.5	34.2±10.5	0.89	0.7537	0.170	
394	4911		125.0	-15.4	6.46 (94)	A9IV;BiN	81.8	-8.3			96.1±6.5	2.7		2.01			

Table 5—Continued

Indx	Pri	Cmp	ℓ	b	V	Type	μ_l	μ_b	$\Delta\mu_\ell^{cor}$	$\Delta\mu_b^{cor}$	d	v_r	Δv_r^{cor}	$\mathcal{M}$	$\Delta\theta d_p$	Prob	Comment
			deg	deg	mag		...........mas yr^{-1}			....	pc	....km s^{-1}....		$M_\odot$	pc		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	4911	5728	126.9	-16.0	8.08	F5;BiN	88.2	-7.2	-6.6 ±2.3	-0.3 ±2.3	95.1±7.2	-43.8	47.7±9.8	1.27	3.2705	0.830	
395	5131		127.3	-41.3	5.33 (32)	A1Vn;BiN	53.8	-14.1			84.3±4.8	-3.9		2.80			74 ψ 01 Psc A; kn: 5132
	5131	5132	127.3	-41.3	5.55	A0Vn;BiN	50.4	-7.0	3.4 ±1.2	-7.1 ±1.1	85.9±5.0	-7.2	3.3±4.6	3.01	0.0123	1.000	74 ψ 01 Psc B
396	5207		128.5	-48.8	7.22 (171)	F6V;OtH	54.8	-34.7			60.0±2.1	6.2		1.28			
	5207	4387	124.6	-47.2	8.67	G5;UnK	49.0	-34.6	4.9 ±1.4	-3.5 ±1.4	67.0±5.4			0.98	3.2148	0.970	
397	5709		284.1	-76.8	7.26 (176)	F4V;OtH	-146.4	19.6			55.0±1.9	10.0		1.26			
	5709	5490	288.0	-76.0	9.58	G8V;OtH	-147.8	9.2	-0.2 ±1.7	-0.1 ±1.5	53.3±4.4	10.1	-0.7±5.4	0.83	1.1909	1.000	
398	6343		280.8	-74.8	8.60 (382)	F3V;UnK	-18.3	-8.2			87.9±6.9			1.15			
	6343	5780	285.3	-75.7	9.26	F7V;UnK	-14.4	-5.5	-3.6 ±1.6	-3.8 ±1.6	94.1±9.8			0.99	2.1725	0.270	
399	6348		286.4	-71.0	7.46 (199)	F2V;UnK	-166.2	-2.0			85.7±4.6			1.43			
	6348	6254	285.7	-72.2	10.22	G5;UnK	-172.1	1.6	5.9 ±1.7	-1.2 ±1.7	82.9±12.3			0.84	1.8595	0.860	
400	6418		284.1	-72.4	7.03 (155)	F1IV;VaR	-127.4	16.0			75.1±3.6	4.2		1.51			
	6418	6482	282.0	-73.4	9.56	G5V;UnK	-136.2	19.4	9.6 ±1.7	1.5 ±1.6	76.9±8.7			0.89	1.5732	0.840	
401	6497		154.5	-75.1	8.16 (309)	G3V;UnK	69.6	56.7			73.6±5.1			1.03			
	6497	6305	150.1	-74.0	8.79	G1V;UnK	80.4	46.5	-6.3 ±1.8	4.3 ±1.8	72.8±5.6			0.98	2.0283	0.890	
402	6668		131.4	-30.8	8.02 (280)	F8;BiN	163.5	-23.4			64.1±3.9	17.5		1.18			kn: 6675
	6668	6675	131.4	-30.8	8.03	G0;SpB	160.7	-25.3	2.8 ±1.6	1.8 ±1.6	60.5±2.6	17.1	0.4±0.2	1.01	0.0177	1.000	
403	6761		241.4	-81.3	8.96 (424)	F7/F8V;UnK	79.0	7.2			81.8±6.6			1.05			kn: 6758
	6761	6758	241.3	-81.3	9.67	-;UnK	74.1	4.2	4.9 ±2.5	3.0 ±2.5	69.5±6.9			0.89	0.0133	1.000	
404	6772		290.2	-64.3	8.09 (293)	F7V;UnK	-303.8	23.5			60.4±3.0			1.06			
	6772	6804	290.1	-64.2	10.98	-;UnK	-302.2	22.5	-1.5 ±2.4	1.5 ±2.6	61.8±8.3			0.68	0.1138	1.000	
405	7189		286.4	-66.1	6.27 (79)	F4V;OtH	56.8	59.8			77.6±2.0	3.2		1.75			
	7189	7086	287.1	-66.0	7.36	F2V;UnK	55.7	58.7	0.4 ±1.5	1.7 ±1.5	77.0±3.3			1.42	0.3762	1.000	
406	7456		141.8	-53.6	6.78 (123)	F8;BiN	-28.0	5.1			76.0±4.0	0.3		1.52			
	7456	8467	145.9	-51.0	8.18	F8;UnK	-29.2	4.3	0.9 ±2.3	-0.8 ±2.2	65.6±4.3			1.08	4.8234	0.260	
407	7885		239.2	-78.2	8.67 (392)	G5V;OtH	77.8	170.8			68.7±3.9	32.0		0.95			
	7885	8894	245.3	-74.6	11.98	-;UnK	55.2	170.5	2.2 ±4.6	0.9 ±4.6	56.3±10.4			0.59	4.5772	0.220	
408	7941		258.3	-75.6	5.70 (50)	A1V;OtH	30.3	-12.5			93.1±2.9	7.0		2.86			
	7941	8162	255.6	-75.3	9.59	G8IV/V;UnK	29.3	-5.7	0.6 ±1.4	-8.2 ±1.4	98.5±12.0			0.94	1.1451	0.220	
409	9170		223.4	-75.2	8.52 (368)	G0V;OtH	25.6	7.9			72.7±5.5	10.9		1.02			
	9170	9660	236.1	-73.3	9.47	G5V;UnK	25.2	8.6	-3.7 ±2.0	3.3 ±2.1	73.0±6.8			0.91	4.9618	0.490	
410	9495		270.7	-66.6	7.71 (239)	F5/F6V;BiN	-37.3	38.5			65.1±2.4	17.4		1.20			
	9495	9672	265.7	-68.0	7.81	G0V;OtH	-31.6	42.2	-0.5 ±1.4	0.4 ±1.4	69.6±3.3	-13.5	31.0±1.5	1.23	2.6831	1.000	
411	9692		184.1	-69.9	8.66 (388)	F8.5V;UnK	-0.9	6.6			78.3±7.1			1.00			
	9692	9496	183.7	-70.5	9.79	G2V;UnK	7.1	6.1	-7.9 ±1.9	0.8 ±1.9	87.6±11.6			0.94	0.9025	0.640	
412	9768		278.7	-61.5	7.47 (203)	F5/F6V;OtH	-46.0	1.3			87.6±3.6	-3.7		1.39			

Table 5—Continued

Indx	Pri	Cmp	ℓ deg	b deg	V mag	Type	μ_l	μ_b	$\Delta\mu_\ell^{cor}$	$\Delta\mu_b^{cor}$	d pc	v_r	Δv_r^{cor}	$\mathcal{M}$ $M_\odot$	$\Delta\theta d_p$ pc	Prob	Comment
							....	mas yr^{-1}	....			....	km s^{-1}				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	9768	9921	278.4	-61.2	9.82	G5/G6I;UnK	-49.9	-3.9	3.9 ±2.2	5.5 ±2.1	82.4±6.1			0.91	0.5586	0.410	
413	10061		259.6	-68.6	8.23 (318)	G3IV;UnK	-84.7	48.2			78.6±4.9			1.03			
	10061	11859	249.4	-65.6	8.90	F6V;UnK	-82.3	52.1	8.4 ±2.3	7.6 ±2.2	74.7±5.0			1.05	6.7643	0.310	
414	10280		143.0	-29.4	4.94 (21)	G5III+;SpB	-45.3	-78.0			89.1±5.6	-18.5		2.36			6 Tri
	10280	11924	147.2	-26.4	8.00	G0III;OtH	-30.7	-81.2	-8.8 ±3.0	4.1 ±3.0	90.7±6.3	-44.0	22.6±3.4	1.18	7.4508	0.190	
415	10483		242.2	-70.4	8.25 (322)	G0V;OtH	-63.3	179.1			68.7±4.4	56.2		1.08			
	10483	10385	237.4	-71.2	10.87	-;UnK	-43.4	180.2	-0.9 ±2.9	5.3 ±2.9	63.1±8.7			0.69	2.0824	0.900	
416	10559		142.5	-26.3	5.25 (29)	A0V;OtH	-3.2	-36.0			86.1±3.0	-1.3		2.83			7 Tri
	10559	11432	145.7	-26.8	5.55	K1III:;OtH	-10.5	-35.1	8.3 ±1.5	-1.1 ±1.4	85.3±2.9	-41.9	40.6±1.2	1.31	4.3323	0.100	11 Tri
417	11137		153.3	-42.0	8.86 (414)	G5;BiN	12.0	216.9			58.8±4.6	25.9		0.90			kn: 11134
	11137	11134	153.3	-42.0	9.36	G5;BiN	12.6	215.6	-0.6 ±1.4	1.3 ±1.4	57.1±5.4	26.8	-0.9±0.7	0.88	0.0099	1.000	
418	11138		137.0	-8.3	6.64 (106)	A5V;OtH	47.4	2.9			71.9±2.3	0.0		1.36			
	11138	11645	139.3	-11.2	8.00	G0;OtH	42.6	2.6	4.8 ±1.4	0.7 ±1.5	68.7±3.6	-0.2	0.8±1.5	1.15	4.7046	0.160	
419	11254		133.5	1.5	8.80 (408)	G4III;OtH	5.0	59.2			92.8±9.3	-23.0		0.99			
	11254	9857	132.8	-3.3	9.04	G5;OtH	-4.5	55.3	8.9 ±2.3	-0.8 ±2.7	97.1±10.9	3.0	-28.1±8.0	1.00	7.8974	0.370	
420	11469		281.0	-54.7	7.45 (198)	F6V;BiN	-25.1	5.7			89.8±10.0	-6.7		1.18			
	11469	11481	280.4	-55.1	8.90	F5V;UnK	-24.5	-0.4	-0.6 ±2.4	6.2 ±2.4	95.2±6.7			1.17	0.7663	0.520	
421	11502		273.9	-59.0	9.03 (429)	G7III:;BiN	48.7	34.4			99.2±8.7	11.3		1.05			
	11502	10876	275.6	-59.9	9.49	K0:IV/;UnK	52.1	31.1	-4.8 ±2.1	5.0 ±2.2	89.4±7.8			0.91	2.2059	0.310	
422	11736		167.4	-52.9	7.67 (232)	A7V;UnK	-7.7	-39.4			71.3±52.5			1.09			
	11736	12728	172.7	-52.0	8.97	G0;UnK	-3.9	-38.3	-2.6 ±3.1	-2.2 ±2.3	79.0±10.4			1.05	4.1732	0.950	
423	11791		169.9	-54.4	5.36 (33)	G3III:;OtH	1.7	-39.9			81.4±3.0	-5.0		1.59			75 Cet
	11791	11736	167.4	-52.9	7.67	A7V;UnK	-7.7	-39.4	7.6 ±2.2	-0.2 ±2.2	71.3±52.5			1.09	3.0313	0.870	
	11791	12728	172.7	-52.0	8.97	G0;UnK	-3.9	-38.3	7.6 ±1.2	-1.0 ±1.2	79.0±10.4			1.05	4.1880	0.110	
424	12361		272.5	-57.4	6.78 (124)	F1III/;UnK	-85.8	22.9			58.9±1.1			1.42			
	12361	12326	272.6	-57.4	7.35	-;BiN	-90.4	28.2	4.5 ±2.7	-5.4 ±2.7	60.5±3.6	16.1		1.11	0.0623	0.990	
425	12548		291.3	-43.1	7.76 (243)	G6V;SpB	-83.6	138.9			53.8±2.3	45.2		1.02			
	12548	13777	287.4	-44.6	9.69	K1/K2V;UnK	-66.0	145.3	-1.9 ±2.3	1.9 ±2.2	51.4±2.3			0.79	3.0338	0.720	
426	13223		161.9	-40.0	8.14 (300)	F5;OtH	54.2	29.7			81.0±5.6	-9.2		1.19			
	13223	13122	160.8	-39.5	8.19	G0;OtH	51.8	28.6	2.4 ±1.2	0.7 ±1.2	76.7±4.0	30.1	-39.5±1.1	1.03	1.3691	0.920	
427	13271		248.0	-62.2	6.36 (85)	A0V;BiN	-8.1	44.4			88.1±3.0	23.0		2.63			
	13271	13499	248.2	-61.6	8.32	F5V;UnK	-6.7	43.9	-1.6 ±1.4	-0.1 ±1.4	80.7±4.4			1.21	0.9880	0.950	
428	13531		141.0	-5.7	3.93 (5)	G4III+;EcB	4.8	-5.5			77.9±2.2	2.2		1.05			18 τ Per A
	13531	12984	141.2	-8.6	8.11	F8;BiN	-2.0	2.5	6.8 ±5.4	-7.6 ±3.6	78.6±8.7	11.3	-9.0±0.6	1.00	3.9037	0.460	
429	13978		179.0	-50.1	7.03 (156)	F0;OtH	-27.7	-29.2			77.3±3.7	5.2		1.55			
	13978	13986	181.2	-51.4	7.76	F5;UnK	-22.5	-22.3	-4.7 ±1.7	-7.4 ±1.7	78.4±6.7			1.29	2.5200	0.300	

Table 5—Continued

Indx	Pri	Cmp	ℓ	b	V	Type	μ_l	μ_b	$\Delta\mu_\ell^{cor}$	$\Delta\mu_b^{cor}$	d	v_r	Δv_r^{cor}	$\mathcal{M}$	$\Delta\theta d_p$	Prob	Comment
			deg	deg	mag		mas yr^{-1}				pc	km s^{-1}		$M_\odot$	pc		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
430	14002		152.9	-24.1	7.41 (192)	F5;OtH	51.0	-15.4			92.1±4.9	-19.8		1.41			
	14002	13791	153.2	-25.6	8.91	F8V...;SpB	49.0	-11.6	2.3 ±1.7	-4.9 ±1.8	97.8±10.1	-2.3	-17.2±2.1	1.12	2.4602	0.160	
431	14168		187.0	-53.3	5.32 (30)	K0II-I;BiN	26.1	28.8			81.2±8.1	24.7		1.65			9 ρ^{02} Eri
	14168	15084	192.5	-52.0	7.68	F5;OtH	22.6	28.9	-2.5 ±1.6	0.1 ±1.6	84.5±4.7	17.1	8.4±1.2	1.43	5.0230	0.120	
432	14180		290.4	-41.3	8.14 (301)	G3IV/V;UnK	-151.9	-36.8			75.8±3.4			1.04			
	14180	16115	289.5	-39.4	8.32	G3V;OtH	-145.3	-34.0	-6.7 ±2.0	-1.8 ±2.2	62.7±2.2	9.3		1.09	2.7280	0.120	
433	14307		266.0	-55.2	7.56 (214)	F8V;BiN	-106.9	39.0			53.5±1.4	20.4		1.29			kn: 14313
	14307	14313	266.0	-55.2	8.59	K1IV;BiN	-107.2	39.2	0.4 ±1.5	-0.3 ±1.5	54.3±2.4	20.2	0.2±10.0	0.86	0.0100	1.000	
434	14328		142.1	-4.3	2.91 (1)	G8III+;EcB	0.7	-1.2			74.6±2.8	2.5		1.50			23 γ Per A
	14328	13531	141.0	-5.7	3.93	G4III+;EcB	4.8	-5.5	-4.0 ±4.9	4.4 ±4.1	77.9±2.2	2.2	0.3±5.0	1.05	2.2735	0.380	18 τ Per A
435	14411		193.0	-54.7	9.48 (452)	G5;UnK	36.3	15.4			89.8±11.9			0.88			
	14411	15802	195.1	-50.4	10.13	G0;UnK	34.4	17.2	0.8 ±2.0	-2.9 ±2.6	97.9±16.0			0.88	7.0380	0.600	
436	14544		145.6	-9.5	6.38 (87)	A3Vnn;VaR	2.9	2.6			82.1±3.4	-9.8		1.40			
	14544	12984	141.2	-8.6	8.11	F8;BiN	-2.0	2.5	3.0 ±3.4	0.5 ±3.2	78.6±8.7	11.3	-21.1±1.2	1.00	6.3551	0.200	
437	14997		169.3	-38.2	9.18 (441)	F5;UnK	34.7	2.2			57.3±4.0			0.84			
	14997	15661	171.8	-37.4	9.67	K0;UnK	30.6	3.6	2.6 ±2.0	-1.1 ±1.7	67.9±9.4			0.85	2.1817	0.210	
438	15152		240.2	-58.2	8.66 (389)	F5V;UnK	-0.2	38.0			97.7±7.2			1.17			
	15152	15537	245.9	-56.7	9.07	F3V;UnK	-2.7	32.5	-2.0 ±2.3	4.6 ±2.1	99.9±10.4			1.12	5.7760	0.240	
439	15239		237.6	-58.1	7.04 (161)	A3V;UnK	1.7	37.1			88.0±4.0			1.49			
	15239	15152	240.2	-58.2	8.66	F5V;UnK	-0.2	38.0	-0.1 ±1.6	-0.8 ±1.5	97.7±7.2			1.17	2.1112	0.910	
	15239	15432	238.3	-57.6	8.19	F3V;UnK	1.5	37.3	-0.4 ±1.7	-0.4 ±1.7	92.4±6.4			1.31	0.9884	1.000	
	15239	15933	240.0	-56.2	7.16	A4V;UnK	-0.2	37.0	0.1 ±1.7	-0.7 ±1.7	99.9±5.6			1.35	3.4955	0.990	
440	15273		159.7	-26.7	8.25 (323)	F5;OtH	49.7	-2.2			82.4±6.8	16.5		1.24			
	15273	16742	162.5	-23.2	8.67	F5;BiN	43.0	-4.5	4.8 ±2.3	0.7 ±2.3	73.7±54.0	29.1	-11.8±0.8	0.99	6.1887	0.370	
441	15432		238.3	-57.6	8.19 (315)	F3V;UnK	1.5	37.3			92.4±6.4			1.31			
	15432	15152	240.2	-58.2	8.66	F5V;UnK	-0.2	38.0	0.3 ±1.9	-0.4 ±1.9	97.7±7.2			1.17	1.8797	1.000	
	15432	15537	245.9	-56.7	9.07	F3V;UnK	-2.7	32.5	-1.7 ±2.7	4.2 ±2.2	99.9±10.4			1.12	6.7342	0.230	
442	15438		290.6	-39.4	7.23 (174)	F3V;BiN	77.5	54.6			71.4±3.5	11.1		1.32			
	15438	17486	285.0	-40.5	7.42	G0V;OtH	83.9	48.9	-0.9 ±2.1	1.2 ±2.0	54.6±1.2	27.1	-18.4±3.9	1.12	5.5198	0.270	
443	15866		229.1	-56.5	7.35 (182)	K1IV/V;UnK	-116.3	43.8			61.3±1.9			1.07			
	15866	14657	226.8	-59.7	10.09	G5;UnK	-117.1	41.1	3.3 ±2.1	8.8 ±3.0	68.7±8.2			0.88	3.6402	0.190	
444	16084		259.5	-53.0	7.68 (234)	G8IV;UnK	40.1	76.1			98.7±5.8			1.19			
	16084	16391	255.6	-53.2	8.83	G5V;OtH	44.5	72.8	0.5 ±1.7	1.0 ±1.4	89.5±5.8	14.2		0.94	4.0328	0.890	
445	16410		161.2	-23.2	6.99 (150)	A3V;BiN	44.2	-2.9			63.0±26.6	2.0		1.50			
	16410	16742	162.5	-23.2	8.67	F5;BiN	43.0	-4.5	1.0 ±3.2	2.0 ±3.2	73.7±54.0	29.1	-26.8±2.5	0.99	1.2623	1.000	
446	16914		290.2	-37.9	6.89 (134)	F0III;UnK	35.3	-37.8			60.2±1.2			1.49			

Table 5—Continued

Indx	Pri	Cmp	ℓ	b	V	Type	μ_l	μ_b	$\Delta\mu_\ell^{cor}$	$\Delta\mu_b^{cor}$	d	v_r	Δv_r^{cor}	$\mathcal{M}$	$\Delta\theta d_p$	Prob	Comment
			deg	deg	mag		....	mas yr^{-1}	....		pc	....km	s^{-1}....	$M_\odot$	pc		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	16914	20610	291.0	-34.0	8.00	F7V;BiN	33.3	-38.7	2.1 ±1.9	-0.1 ±3.1	71.3±11.1	-3.0		1.10	4.1957	0.180	kn: 20612
	16914	20612	291.0	-34.0	8.20	-;BiN	29.8	-40.7	5.6 ±2.1	1.9 ±3.2	59.9±9.0	0.3		1.09	4.1971	0.590	
447	16954		239.7	-53.6	9.99 (464)	K0;UnK	-117.3	230.5			68.0±6.3			0.82			
	16954	16315	245.4	-54.8	11.86	-;UnK	-133.5	215.4	-3.6 ±3.5	5.5 ±2.8	63.3±9.9			0.62	4.1561	0.180	
448	16959		273.7	-46.8	6.96 (143)	F3V;BiN	-50.8	2.0			74.1±2.0	5.4		1.46			kn: 16942
	16959	16942	273.7	-46.8	8.35	F5V;BiN	-52.2	0.5	1.3 ±1.7	1.5 ±1.7	76.3±3.4	7.1	-1.7±5.8	1.10	0.0207	1.000	
449	17085		190.7	-43.8	9.58 (457)	F5;UnK	0.4	1.2			90.6±16.9			0.95			
	17085	17451	187.8	-40.8	10.49	F0;UnK	2.2	-6.8	-0.6 ±2.0	6.4 ±2.2	89.2±22.7			0.81	5.7919	0.250	
450	17486		285.0	-40.5	7.42 (194)	G0V;OtH	83.9	48.9			54.6±1.2	27.1		1.12			
	17486	17515	285.0	-40.5	7.57	G0V;OtH	85.2	50.1	-1.3 ±1.7	-1.3 ±1.8	52.3±1.2	27.3	-0.2±0.2	1.08	0.0200	1.000	
451	17603		154.1	-9.6	8.77 (404)	G0;UnK	113.8	15.7			87.1±8.3			1.00			
	17603	18358	158.1	-11.7	8.84	G5;OtH	115.6	21.4	-3.6 ±2.6	-3.4 ±2.1	86.3±8.1	81.4		1.06	6.8404	0.130	
452	17675		148.4	-2.3	6.90 (137)	F0;OtH	93.6	-24.9			57.3±1.8	-2.4		1.37			
	17675	17782	148.4	-1.9	8.75	G6IV;BiN	89.2	-22.2	4.4 ±1.8	-2.6 ±1.9	51.7±4.3	-3.8	1.3±3.0	0.77	0.3802	0.890	
453	17796		162.2	-18.4	9.04 (430)	G0;UnK	21.9	-18.4			67.9±4.3			0.90			
	17796	18204	163.0	-17.6	9.19	G0;UnK	15.7	-21.8	5.9 ±1.9	3.0 ±2.0	70.1±5.8			0.87	1.2807	0.950	
454	18239		187.9	-37.9	9.61 (458)	G0;UnK	-1.2	-11.6			97.0±17.2			0.95			
	18239	17451	187.8	-40.8	10.49	F0;UnK	2.2	-6.8	-3.3 ±1.5	-3.3 ±1.9	89.2±22.7			0.81	4.9781	0.110	
455	18314		145.7	2.9	7.78 (246)	A3;OtH	62.8	-14.8			95.3±6.2	31.1		1.51			
	18314	18325	145.2	3.5	9.27	G8V;UnK	62.7	-26.8	0.7 ±2.3	11.3 ±2.3	98.0±9.9			0.90	1.2784	0.430	
456	18420		249.3	-49.5	8.13 (299)	F5/F6V;OtH	-15.2	-4.3			85.3±3.9	-6.5		1.17			
	18420	18496	250.2	-49.2	9.15	F8V;UnK	-17.5	6.3	2.5 ±1.5	-10.6 ±1.5	80.3±7.4			0.95	0.9304	0.660	kn: 18497
457	18772		273.4	-43.6	4.97 (22)	K4III;OtH	-113.7	19.5			97.8±1.5	60.5		0.53			ι Ret
	18772	20627	272.7	-40.8	8.25	G1V;UnK	-109.1	12.8	-3.1 ±1.6	1.2 ±1.9	92.3±4.4			1.12	4.9795	0.170	
458	18888		250.3	-48.2	8.12 (298)	G3V;OtH	93.7	-49.0			62.9±2.6	33.0		1.02			
	18888	18958	250.4	-48.1	8.48	G5V;BiN	94.9	-47.4	-1.2 ±1.4	-1.7 ±1.5	69.0±3.8	33.7	-0.7±0.3	0.92	0.1814	1.000	
459	19127		153.9	-3.9	6.77 (122)	A2;OtH	66.9	-9.0			93.2±5.2	44.0		1.35			
	19127	19628	157.4	-6.1	8.10	F4V...;OtH	59.6	-0.1	1.0 ±1.6	-4.7 ±1.6	93.1±7.1	21.9	24.0±4.2	1.26	6.7829	0.660	
460	19253		126.6	24.2	8.70 (396)	G0;UnK	22.5	26.2			88.9±5.7			1.12			
	19253	30166	129.4	26.2	8.73	F8;UnK	24.8	31.1	-1.6 ±2.2	-5.3 ±2.1	89.9±8.0			0.98	5.0141	0.270	
461	19347		190.7	-35.0	7.94 (267)	F2;BiN	57.5	-32.3			89.5±5.9	10.7		1.43			
	19347	20073	192.9	-33.3	8.52	G0;UnK	59.3	-32.0	-1.9 ±1.4	0.2 ±1.3	97.3±10.0			1.12	3.8305	0.820	
462	20109		261.6	-44.1	6.08 (69)	F7IV-V;BiN	-83.0	29.0			72.0±1.9	16.0		1.83			
	20109	20074	261.7	-44.1	7.75	F5V;OtH	-82.1	30.6	-0.9 ±1.8	-1.6 ±1.9	74.3±2.8	20.9	-4.9±5.6	1.31	0.0945	1.000	
463	20184		227.7	-44.4	8.16 (310)	G2V;OtH	-39.5	69.9			56.2±2.1	41.8		1.20			
	20184	19926	227.0	-45.0	9.26	G5V;BiN	-47.5	68.5	9.9 ±2.4	3.3 ±2.5	55.2±4.9	36.3	5.4±0.4	0.87	0.7526	0.960	

Table 5—Continued

Indx	Pri	Cmp	ℓ	b	V	Type	μ_l	μ_b	$\Delta\mu_\ell^{cor}$	$\Delta\mu_b^{cor}$	d	v_r	Δv_r^{cor}	$\mathcal{M}$	$\Delta\theta d_p$	Prob	Comment
			deg	deg	mag		....	.... mas yr^{-1}	....		pc	.... km s^{-1}	....	$M_\odot$	pc		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
464	20669		144.2	10.0	8.30 (329)	G0;UnK	-45.7	-131.7			62.4±2.9			0.91			
	20669	20637	144.2	10.0	9.96	K0;UnK	-49.0	-128.2	3.4 ±2.7	-3.5 ±2.7	64.3±6.3			0.82	0.0636	1.000	
465	21537		195.6	-29.1	7.49 (205)	G5;BiN	0.9	19.0			66.9±3.2	38.5		1.13			kn: 21534
	21537	21534	195.6	-29.1	7.50	G5;BiN	-4.3	19.4	5.3 ±1.7	-0.5 ±1.8	66.1±3.4	38.6	-0.1±0.3	1.03	0.0253	1.000	
466	21608		164.9	-6.4	8.44 (352)	F8;OtH	33.7	-15.9			96.6±13.3	12.3		1.10			
	21608	20707	164.4	-9.3	9.20	F8;UnK	31.2	-16.1	2.7 ±2.7	1.5 ±2.7	99.9±17.7			1.00	4.9353	0.430	
467	21704		219.6	-38.1	7.18 (168)	K0/K1I;UnK	-14.8	15.4			87.1±5.9			1.55			kn: 21702
	21704	21702	219.6	-38.1	9.04	G0;UnK	-15.0	16.4	0.2 ±3.3	-1.0 ±3.4	90.9±13.1			1.00	0.0170	1.000	
468	22226		226.3	-37.9	7.85 (253)	F3V;UnK	14.9	31.0			80.3±4.6			1.34			
	22226	22538	228.1	-37.3	8.58	F5V;UnK	12.4	30.8	1.1 ±2.2	0.1 ±2.2	65.4±4.0			1.05	2.1585	0.530	
469	22407		170.0	-7.8	5.84 (55)	A8m;SpB	40.2	-2.0			83.8±3.4	20.3		2.16			
	22407	21397	168.1	-10.0	8.45	F8;UnK	41.8	1.4	0.1 ±1.5	-1.7 ±1.5	77.1±5.2			1.10	4.2266	0.510	
470	22611		236.5	-38.5	6.68 (115)	F6IV/V;UnK	2.2	75.8			59.3±1.4			1.37			
	22611	22604	236.5	-38.6	8.83	G5V;BiN	4.3	72.1	-2.1 ±1.8	3.7 ±1.7	57.6±2.7	45.9		0.90	0.0287	1.000	
471	23044		198.1	-24.6	8.49 (364)	G5;BiN	0.7	57.3			81.5±11.7	36.2		0.94			
	23044	23266	198.5	-24.0	9.11	F8V;BiN	7.6	53.7	-7.6 ±1.5	2.5 ±1.6	84.0±15.5	106.0	-69.6±2.5	1.02	1.0519	0.990	
472	23345		261.8	-37.6	8.18 (312)	F5IV/V;OtH	47.8	-33.5			92.9±4.6	5.5		1.20			
	23345	22199	263.2	-39.7	8.59	F5V;UnK	47.0	-35.8	1.1 ±2.0	3.5 ±2.0	82.6±4.4			1.13	3.7580	0.140	
473	24008		249.7	-36.3	7.49 (206)	F5V;OtH	-96.2	27.7			59.0±1.3	28.3		1.27			
	24008	24597	247.6	-34.9	8.28	G3V;OtH	-91.1	27.2	-1.5 ±1.4	-0.1 ±1.6	46.6±1.1	30.5	-1.2±0.5	0.90	2.2769	0.170	
474	24016		174.9	-6.0	6.67 (113)	F8V;SpB	39.1	53.5			53.0±1.9	-1.5		1.37			kn: 24005
	24016	24005	174.9	-6.0	8.51	G0;UnK	40.0	56.2	-0.9 ±1.9	-2.7 ±2.0	53.4±3.0			0.93	0.0177	1.000	
475	24320		269.0	-35.4	8.59 (380)	G5V;BiN	-120.2	14.4			57.5±15.5	14.1		0.86			
	24320	21286	270.0	-40.3	9.14	G8V;OtH	-110.0	15.1	-11.0 ±5.9	2.2 ±6.2	58.5±2.2	13.5	-0.2±0.8	0.87	4.9187	0.250	
476	24934		174.8	-3.1	9.41 (448)	F8;UnK	-0.9	-13.2			98.5±12.9			1.02			
	24934	26322	174.6	1.0	11.98	-;UnK	-2.0	-12.2	1.2 ±4.2	-2.5 ±5.2	91.0±38.9			1.86	7.0484	0.960	
477	25001		176.6	-4.1	5.66 (47)	A1Vs;SpB	-1.1	-0.8			88.6±2.5	-19.7		2.53			
	25001	24878	175.6	-3.8	8.99	A5;UnK	-6.1	-1.8	4.3 ±1.6	1.3 ±1.6	99.9±12.6			1.27	1.5083	0.110	
478	25453		196.7	-15.4	6.41 (89)	A0Vn;BiN	34.9	-8.9			92.2±4.0	13.1		2.91			
	25453	25483	196.4	-15.1	7.03	A0;VaR	33.2	-10.5	1.8 ±2.7	1.4 ±2.8	91.2±3.7	35.4	-22.4±2.7	1.41	0.5051	1.000	
	25453	26161	198.4	-14.0	7.73	A2;UnK	31.4	-8.8	2.7 ±2.4	-0.6 ±2.5	99.9±7.9			1.55	3.4094	0.610	
479	25483		196.4	-15.1	7.03 (157)	A0;VaR	33.2	-10.5			91.2±3.7	35.4		1.41			
	25483	26161	198.4	-14.0	7.73	A2;UnK	31.4	-8.8	-0.8 ±2.8	-3.1 ±2.8	99.9±7.9			1.55	3.4448	0.390	
480	25638		190.9	-11.4	6.35 (83)	A4V;OtH	16.8	2.6			93.5±5.1	25.0		1.32			
	25638	25975	189.5	-9.4	10.45	F0;UnK	9.5	1.8	8.8 ±1.9	-1.2 ±1.9	98.2±27.6			0.90	4.0444	0.300	
481	25711		176.0	-1.6	9.27 (442)	G0;UnK	37.1	-28.2			89.7±12.8			0.92			

Table 5—Continued

Indx	Pri	Cmp	ℓ	b	V	Type	μ_l	μ_b	$\Delta\mu_\ell^{cor}$	$\Delta\mu_b^{cor}$	d	v_r	Δv_r^{cor}	$\mathcal{M}$	$\Delta\theta d_p$	Prob	Comment
			deg	deg	mag		............mas yr^{-1}			....	pc	.... km s^{-1}		$M_\odot$	pc		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	25711	25614	176.2	-2.0	10.13	G0;UnK	44.8	-29.8	-7.8 ±2.2	1.7 ±2.2	93.5±16.4			0.92	0.6921	0.900	
482	26159		184.9	-6.0	8.73 (399)	F5;UnK	22.1	5.8			98.8±17.8			1.17			
	26159	26183	187.9	-7.8	9.15	G0;UnK	30.2	8.5	-9.4 ±1.8	-1.9 ±1.6	99.9±16.9			1.06	6.0368	0.260	
483	26290		173.3	1.7	9.04 (431)	F5;UnK	4.5	-11.0			95.1±12.8			1.11			
	26290	26322	174.6	1.0	11.98	-;UnK	-2.0	-12.2	6.1 ±4.2	1.5 ±5.0	91.0±38.9			1.86	2.4171	0.940	
484	26309		232.7	-28.1	6.26 (78)	A2III-;UnK	10.6	22.5			52.8±1.2	22.4		1.33			
	26309	26453	232.7	-27.8	7.26	F3V;UnK	9.9	23.9	0.7 ±1.6	-2.0 ±1.7	56.8±2.0			1.30	0.3102	0.990	
485	26401		248.4	-31.2	9.30 (443)	K1/K2V;BiN	4.6	0.4			76.6±8.9	30.5		0.90			
	26401	27297	251.2	-29.8	10.51	-;UnK	-3.0	-9.7	4.1 ±2.9	8.2 ±3.0	77.5±48.6			0.80	3.6625	0.850	
486	26404		228.2	-26.5	7.68 (235)	F5V;BiN	14.5	11.4			57.0±2.2	-7.1		1.19			
	26404	27260	226.4	-23.6	8.61	G0V;UnK	13.3	14.4	0.7 ±2.1	-1.8 ±2.1	62.2±4.1			0.97	3.3570	0.510	
487	26680		195.4	-10.8	7.92 (263)	F0;OtH	20.3	-20.5			91.1±7.9	48.0		1.35			
	26680	26646	195.3	-10.8	8.62	F5;UnK	20.4	-21.6	0.2 ±1.6	1.2 ±1.5	82.6±7.9			1.15	0.2109	1.000	
488	26957		168.8	6.2	6.81 (126)	G0;OtH	117.9	2.5			88.7±7.6	9.4		1.76			
	26957	26580	165.2	7.5	8.07	G5;BiN	127.8	2.8	-8.8 ±1.4	0.2 ±1.3	88.3±9.9	-217.6	223.9±1.9	0.98	5.9280	0.650	
489	27069		210.2	-17.4	7.98 (270)	F2;UnK	28.8	3.4			86.7±6.3			1.32			
	27069	26588	209.9	-18.8	8.30	F5;UnK	27.7	3.7	1.2 ±1.6	0.5 ±1.7	96.5±8.4			1.26	2.1103	0.930	
490	27158		216.9	-20.2	8.31 (331)	G6V;OtH	110.7	-48.7			79.8±5.5	-33.0		0.96			
	27158	26809	220.4	-22.7	9.06	G0;UnK	121.1	-52.4	-4.5 ±1.9	2.6 ±1.9	74.1±7.2			0.96	5.7198	0.130	
491	27193		253.7	-30.3	7.22 (172)	F1V;UnK	7.5	-35.2			97.1±3.7			1.58			
	27193	29285	256.7	-26.6	7.65	F5/F6I;OtH	7.2	-34.5	0.2 ±1.7	-1.9 ±2.1	99.2±3.8	1.4		1.42	7.7252	0.240	
492	27791		176.1	4.2	7.72 (241)	F8;BiN	53.4	-44.3			95.9±29.4	-16.9		1.18			
	27791	28872	175.2	7.6	8.78	G0;UnK	55.1	-38.3	-2.2 ±2.0	-3.5 ±2.0	99.9±11.4	36.0	-54.5±4.2	1.16	6.0375	0.910	
493	28036		244.1	-26.7	7.46 (200)	F7V;BiN	-4.7	22.4			54.4±1.3	24.3		1.25			
	28036	26990	245.5	-29.5	8.14	G0V;OtH	-6.2	28.4	-0.8 ±1.8	-1.6 ±1.6	55.4±1.4	23.8	0.2±0.6	0.95	2.8236	0.920	
494	28525		291.6	-28.9	8.69 (394)	G0V;UnK	-42.1	-0.3			82.1±6.9			1.00			
	28525	37855	291.9	-24.3	8.90	G0V;YnG	-44.8	-2.2	2.6 ±2.1	0.9 ±2.9	80.3±4.8	25.2		0.97	6.5873	0.290	
495	29142		260.1	-27.5	7.97 (268)	F9V;BiN	-65.3	-5.9			85.5±5.7	28.1		1.31			
	29142	29094	261.4	-27.7	8.21	F7V;OtH	-70.6	-12.2	4.0 ±2.3	5.9 ±2.1	88.0±3.9	35.9	-8.3±1.0	1.19	1.7177	0.170	
496	29439		275.2	-28.5	6.85 (129)	F6V;BiN	-144.5	33.4			70.2±6.6	39.4		1.40			kn: 29444
	29439	29444	275.3	-28.5	8.60	F7IV;BiN	-147.1	27.4	2.5 ±2.6	6.0 ±2.6	51.7±16.6	44.7	-5.3±0.5	0.97	0.0069	1.000	
497	29692		225.8	-16.1	5.99 (65)	K1III;BiN	76.7	12.9			62.5±3.1	64.0		1.19			
	29692	29601	224.8	-15.9	7.91	G2V;BiN	75.0	10.5	5.5 ±1.9	1.4 ±1.9	75.9±7.1	47.1	16.5±0.5	1.26	1.1190	0.210	
498	29930		200.8	-3.1	8.01 (278)	F5;BiN	1.4	-7.7			80.6±6.2	29.5		1.45			
	29930	30164	204.3	-4.1	10.25	A;BiN	-0.7	-0.1	-2.5 ±2.9	-6.2 ±2.9	67.8±38.9	42.0	-12.5±1.8	1.57	5.1193	0.500	
499	31323		191.3	6.3	7.18 (169)	A3;BiN	28.4	-24.7			86.0±5.6	-29.4		1.47			kn: 31316

Table 5—Continued

Indx	Pri	Cmp	ℓ	b	V	Type	μ_l	μ_b	$\Delta\mu_\ell^{cor}$	$\Delta\mu_b^{cor}$	d	v_r	Δv_r^{cor}	$\mathcal{M}$	$\Delta\theta d_p$	Prob	Comment
			deg	deg	mag		.... mas yr^{-1}				pc	.... km s^{-1}		$M_\odot$	pc		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	31323	31316	191.3	6.3	7.42	A3;BiN	28.1	-21.5	0.3 ±1.4	-3.3 ±1.4	88.0±7.2	-24.3	-5.1±5.0	1.41	0.0223	1.000	
500	31562		184.2	10.3	8.34 (336)	F8III;UnK	21.3	8.6			96.9±9.7			1.19			
	31562	30618	185.2	7.3	10.22	G1;EcB	14.0	7.5	7.0 ±2.3	2.0 ±2.6	99.9±22.9	31.9		0.91	5.2109	0.140	
501	31577		204.4	0.2	9.46 (451)	B5V;BiN	-1.3	-2.8			99.7±37.1	-8.2		1.16			
	31577	30362	201.8	-2.2	9.73	B9III;UnK	2.3	-3.4	-4.4 ±4.5	-0.2 ±4.6	99.9±99.9			0.97	6.1260	0.980	kn: 30365
502	32289		288.6	-26.8	9.02 (427)	G3V;UnK	-98.1	17.4			91.2±61.5			0.95			
	32289	26813	287.5	-30.5	9.88	G6V;YnG	-102.4	18.3	4.7 ±2.0	0.7 ±2.4	99.9±10.6	4.0		0.91	6.0444	0.460	
503	32435		296.2	-27.1	7.46 (201)	F5V;OtH	-60.1	20.7			56.0±1.1	12.5		1.20			
	32435	22295	293.6	-31.5	8.14	F7V;BiN	-58.7	25.4	1.0 ±1.6	0.2 ±1.5	61.0±1.9	11.5	1.1±2.1	1.09	4.8537	0.780	
504	32438		156.3	22.5	4.86 (16)	A3V;BiN	-1.2	-20.6			65.8±3.4	-3.0		2.39			12 Lyn
	32438	32967	158.9	22.6	7.95	F8;OtH	-10.4	-20.3	9.2 ±2.2	-0.3 ±1.7	70.9±4.6	-25.7	22.7±5.0	1.17	2.7741	0.110	
505	33485		171.6	19.9	4.90 (18)	A2Vn;VaR	-5.2	-21.8			73.9±1.3	-8.0		2.69			16 Lyn
	33485	35799	173.1	24.1	11.27	-;UnK	-8.7	-15.4	3.8 ±2.3	-4.5 ±2.3	85.3±99.9			0.75	5.7915	0.130	
506	33806		176.9	18.8	8.61 (384)	F5;OtH	66.2	-42.2			88.0±9.8	-1.9		1.06			
	33806	34667	175.3	21.2	9.52	G0;UnK	70.9	-32.0	-4.4 ±1.7	-9.3 ±1.7	84.9±11.5			0.87	4.3316	0.640	
507	34570		208.9	7.1	8.29 (328)	A3;UnK	2.2	-12.3			96.5±8.2			1.35			
	34570	35423	213.5	7.4	9.94	F2;UnK	7.3	-9.2	-7.0 ±2.5	-3.2 ±1.7	87.0±35.1			0.86	7.7476	0.110	
508	35213		236.5	-5.2	6.02 (66)	A5m...;BiN	-51.4	-8.7			92.9±36.0	36.9		1.98			
	35213	35578	239.9	-6.0	6.74	F0;UnK	-50.2	-6.9	-6.1 ±2.6	-1.0 ±1.8	92.3±3.9	40.6	-5.1±1.5	1.80	5.6815	0.990	
509	35229		238.2	-6.0	7.03 (158)	A1V;UnK	0.5	-1.5			94.9±5.0			1.39			
	35229	36998	239.1	-1.5	10.10	-;UnK	-0.1	9.2	0.2 ±2.1	-12.5 ±2.7	86.4±92.6			2.15	7.6324	0.190	
510	35341		177.1	22.1	5.87 (58)	A5Vn;OtH	-15.1	-10.9			85.3±3.6	-10.0		1.57			64 Aur
	35341	35799	173.1	24.1	11.27	-;UnK	-8.7	-15.4	-7.8 ±2.2	5.0 ±2.1	85.3±99.9			0.75	6.2760	1.000	
511	35472		166.0	25.1	7.82 (251)	F8;OtH	38.8	-27.9			95.0±9.0	5.6		1.10			
	35472	36470	168.0	26.5	8.13	F5;BiN	44.2	-20.3	-6.3 ±2.1	-8.5 ±2.1	90.4±32.0	14.2	-8.4±0.8	1.33	3.8103	0.740	
512	36917		243.0	-3.9	4.65 (10)	B8V;BiN	-14.6	-60.1			67.9±3.1	3.3		3.83			p Pup
	36917	36890	243.0	-4.0	7.82	F2V;UnK	-16.6	-61.3	2.0 ±1.8	1.2 ±1.7	73.0±4.0			1.26	0.1745	0.990	
513	37265		185.0	24.2	4.89 (17)	F3III;OtH	99.4	-67.1			51.0±0.8	7.3		1.80			71 o Gem
	37265	36993	186.6	23.1	8.00	G0;OtH	88.5	-67.5	9.3 ±1.4	-0.1 ±1.3	50.8±2.8	29.4	-21.2±0.7	1.08	1.6479	0.150	
514	37519		246.9	-4.4	7.00 (151)	A9IV/V;UnK	23.7	-9.0			68.8±2.4	-4.6		1.53			
	37519	37224	246.3	-4.9	8.28	F8V;BiN	33.2	-13.6	-9.6 ±1.8	4.5 ±1.8	65.1±3.6	3.0	-7.7±3.4	1.00	0.9347	0.300	
515	37621		274.1	-18.0	8.18 (313)	F2IV/V;OtH	2.7	12.9			79.5±3.5	-9.6		1.20			
	37621	35111	274.1	-21.4	10.89	F;UnK	4.1	0.8	-1.4 ±3.4	10.6 ±3.5	74.1±36.8			0.82	4.7511	0.250	
516	37934		153.8	30.2	6.50 (97)	F0spe.;RoT	60.5	-38.6			96.7±4.2	1.9		1.77			49 Cam
	37934	38699	153.2	31.2	7.81	F8;UnK	53.9	-39.3	6.9 ±2.1	0.9 ±2.1	97.4±6.8			1.28	1.9113	0.150	
517	38146		241.5	0.5	5.32 (31)	G0III;BiN	-29.8	-18.3			86.3±8.7	0.7		1.35			188 Pup

Table 5—Continued

Indx	Pri	Cmp	ℓ	b	V	Type	μ_l	μ_b	$\Delta\mu_\ell^{cor}$	$\Delta\mu_b^{cor}$	d	v_r	Δv_r^{cor}	$\mathcal{M}$	$\Delta\theta d_p$	Prob	Comment
			deg	deg	mag		....	mas yr^{-1}	....		pc	....km s^{-1}....		$M_\odot$	pc		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	38146	37371	241.9	-2.0	7.82	A3;UnK	-33.2	-20.5	3.4 ±1.8	2.3 ±1.8	93.4±6.3			1.51	3.8900	0.150	
518	38681		183.2	28.1	7.92 (264)	F0;UnK	30.4	-31.1			80.0±5.1			1.25			
	38681	39916	183.8	30.8	8.93	F8;UnK	32.0	-42.7	-1.9 ±2.9	10.8 ±3.2	79.9±18.0			0.94	3.8832	0.150	
519	38797		189.2	26.8	7.57 (216)	F0;VaR	16.2	8.1			93.4±5.8	8.4		1.50			
	38797	39735	188.2	29.5	8.20	F5;OtH	21.1	10.4	-4.6 ±1.6	-3.0 ±1.5	97.8±6.6	7.4	1.0±3.7	1.30	4.5176	0.170	
520	39457		248.8	-0.2	8.72 (398)	G3V;UnK	-165.4	17.4			73.3±6.2			0.95			kn: 39452
	39457	39452	248.8	-0.2	9.70	-;UnK	-162.7	16.2	-2.7 ±3.2	1.2 ±3.2	71.3±10.0			0.86	0.0171	1.000	
521	39561		251.3	-1.4	7.64 (225)	F6V;BiN	-79.0	14.7			93.4±9.1	36.3		1.20			
	39561	40018	248.5	1.7	8.43	F7V;UnK	-70.7	8.9	-4.2 ±2.3	1.1 ±2.4	92.2±7.9			1.18	6.8987	0.270	
522	39735		188.2	29.5	8.20 (317)	F5;OtH	21.1	10.4			97.8±6.6	7.4		1.30			
	39735	39667	186.5	29.7	10.01	F5;UnK	22.9	-1.2	-1.6 ±2.3	11.8 ±2.2	99.9±17.3			0.82	2.6251	0.370	
523	39874		209.0	23.2	6.25 (77)	F3V;OtH	14.6	-3.1			80.0±2.3	-10.0		1.57			12 Cnc
	39874	38444	208.8	18.9	10.36	F5;UnK	4.7	-1.7	9.8 ±1.7	-3.3 ±1.9	95.1±69.6			0.82	5.9413	0.420	
524	40006		162.1	33.1	7.52 (210)	A2;SpB	59.0	-14.4			92.2±7.9	21.0		1.71			
	40006	37178	162.4	28.5	7.95	F5;OtH	58.2	-9.4	0.5 ±1.9	-1.3 ±2.0	87.5±5.8	-7.2	28.8±5.1	1.36	7.3191	0.540	
	40006	40536	164.2	34.0	8.66	F5;UnK	56.2	-19.7	1.0 ±1.9	3.4 ±1.7	89.9±7.8			1.15	3.1523	0.990	
525	41081		268.0	-8.5	5.89 (59)	A0V;OtH	-28.8	-7.8			70.0±1.1	19.4		2.73			
	41081	40916	268.0	-8.8	6.63	A0/A1V;UnK	-28.1	-8.7	-0.6 ±1.5	1.2 ±1.6	67.2±1.2			1.42	0.3801	1.000	
526	41147		270.8	-10.2	7.53 (212)	F0IV;UnK	38.6	-29.1			78.4±2.4			1.37			
	41147	41579	271.7	-10.0	9.57	G5V;UnK	33.4	-28.6	5.1 ±2.1	-0.5 ±2.1	80.4±6.5			0.92	1.3032	0.960	
527	41880		225.9	21.8	9.11 (435)	G0;BiN	-136.7	-77.0			70.6±9.1	15.1		0.86			kn: 41881
	41880	41881	225.9	21.8	10.04	-;UnK	-137.0	-78.2	0.3 ±1.6	1.2 ±1.6	75.7±14.0			0.82	0.0135	1.000	
528	42637		292.4	-21.7	5.46 (37)	B8V;BiN	-38.4	-9.9			95.0±1.4	14.0		3.44			η Cha
	42637	42794	292.6	-21.6	6.05	A7V;EcB	-39.0	-10.5	0.5 ±1.1	0.5 ±1.2	92.9±2.1	16.1	-2.1±5.6	2.23	0.2309	1.000	9 Cha
529	43316		254.0	8.1	7.86 (255)	F4V;BiN	-34.4	-98.4			83.3±7.6	32.7		1.20			
	43316	43193	254.0	7.7	8.76	G0V;BiN	-32.9	-99.0	-1.6 ±1.8	1.3 ±1.8	73.8±7.4	22.6	10.4±5.3	0.91	0.6397	0.980	
530	43352		255.5	7.1	5.19 (26)	G5III;BiN	37.7	-29.7			68.6±4.1	-7.8		1.43			
	43352	43287	253.4	8.5	8.38	G1V;UnK	38.4	-25.8	-1.4 ±1.7	-3.0 ±1.8	74.0±4.9			1.02	3.0742	0.390	
531	43701		206.6	35.7	8.60 (383)	F8;OtH	-14.7	-51.1			93.5±11.2	30.9		1.19			
	43701	44358	210.8	36.4	8.68	G5;OtH	-19.5	-46.2	-1.5 ±1.4	-5.1 ±1.4	94.3±8.9	29.0	1.1±0.5	1.03	5.6473	0.570	
532	43813		222.3	30.2	3.11 (2)	G9II-I;OtH	-28.7	-71.2			51.3±0.5	22.3		0.72			16 ζ Hya
	43813	42313	220.3	26.2	4.14	A1Vnn;BiN	-26.1	-63.5	1.5 ±6.8	-1.5 ±7.3	49.2±1.5	11.3	12.4±2.6	2.80	3.9524	0.700	4 δ Hya
533	43920		244.1	17.8	6.56 (100)	F2;BiN	-9.5	-58.2			62.3±3.9	33.0		1.44			
	43920	44657	248.9	16.9	8.66	G3V;OtH	-20.8	-55.4	1.0 ±2.4	-0.8 ±2.3	60.6±3.6	15.9	17.0±0.7	1.00	5.0341	0.910	
534	44093		267.7	-0.9	5.17 (25)	Am;BiN	-96.0	-27.1			68.9±1.0	17.7		2.16			
	44093	42847	265.5	-2.4	8.86	G2V;UnK	-90.5	-28.5	-3.3 ±1.4	3.0 ±1.4	69.7±3.3			0.96	3.2072	0.320	

Table 5—Continued

Indx	Pri	Cmp	ℓ	b	V	Type	μ_l	μ_b	$\Delta\mu_\ell^{cor}$	$\Delta\mu_b^{cor}$	d	v_r	Δv_r^{cor}	$\mathcal{M}$	$\Delta\theta d_p$	Prob	Comment
			deg	deg	mag		............mas yr^{-1}............				pc	.....km s^{-1}.....		$M_\odot$	pc		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
535	44154		192.1	40.0	5.23 (27)	G9III;BiN	27.3	-50.2			90.7±2.3	23.3		1.17			64 σ 03 Cnc
	44154	45910	193.2	44.6	6.79	A0;OtH	28.1	-51.9	-2.3 ±1.4	-2.9 ±1.3	90.7±4.7	9.0	12.7±2.8	1.38	7.3938	0.230	
536	44520		226.5	30.7	8.91 (420)	G5;UnK	106.9	3.9			56.2±4.9	3.5		0.85			
	44520	44518	226.5	30.7	9.26	G5;UnK	103.1	-0.4	3.8 ±1.6	4.3 ±1.6	47.8±4.0	1.3	2.2±1.6	0.83	0.0088	1.000	
537	45167		226.9	32.9	6.14 (71)	A0V;OtH	-21.9	-47.9			99.3±3.8	20.0		2.86			
	45167	45564	228.8	33.3	7.77	F0;UnK	-25.1	-48.7	1.1 ±1.7	0.9 ±1.7	96.1±7.3			1.40	2.9820	0.630	
538	45585		290.1	-17.5	5.86 (57)	A0V;OtH	-47.1	2.5			82.0±1.5	11.2		2.92			
	45585	46720	290.0	-16.1	7.33	F1V;UnK	-46.2	5.7	-0.9 ±2.5	-3.9 ±2.6	83.5±3.6			1.44	1.9573	0.840	
539	45667		264.1	7.3	6.89 (135)	A1V;UnK	-39.9	-15.5			94.4±3.8			1.60			
	45667	44876	262.6	6.0	7.40	A4/A5I;UnK	-36.2	-21.3	-3.4 ±2.6	5.9 ±2.6	93.5±5.1			1.56	3.2072	0.180	
540	45811		241.1	27.1	4.80 (14)	G8III-;BiN	14.3	-28.3			68.2±1.4	25.0		0.97			27 P Hya; kn: 45802
	45811	45802	241.1	27.0	6.99	F4V;BiN	12.5	-27.9	1.7 ±1.3	-0.4 ±1.3	62.8±2.7	16.0	9.0±2.7	1.40	0.0758	1.000	
541	45937		275.5	-3.2	8.07 (287)	G8IV/V;UnK	-73.4	98.9			68.8±2.7			0.94			
	45937	45952	275.5	-3.1	8.27	G3V;BiN	-69.8	92.6	-3.6 ±2.3	6.3 ±2.3	67.0±3.8	90.8		0.98	0.1072	1.000	
542	46298		133.8	33.9	8.33 (335)	G1V;BiN	-38.2	10.5			50.3±2.1	-10.5		0.89			kn: 46299
	46298	46299	133.8	34.0	8.67	M2;BiN	-40.0	14.6	1.8 ±1.6	-4.1 ±1.6	54.7±3.1	-10.9	0.4±0.4	0.85	0.0072	1.000	
543	46460		284.7	-11.3	5.90 (60)	A0V;BiN	-57.9	10.0			77.6±1.9	29.0		2.76			
	46460	47017	284.0	-9.6	8.00	F5V;BiN	-54.2	8.8	-2.7 ±1.9	-1.0 ±2.2	81.4±4.2	30.9	-1.5±42.8	1.33	2.4730	0.160	
	46460	47115	284.1	-9.5	6.55	A2V;UnK	-56.0	7.5	-1.0 ±1.8	0.1 ±2.2	79.9±2.9	16.2	13.1±14.7	1.48	2.5956	1.000	
	46460	47335	285.6	-10.7	7.39	A9IV/V;UnK	-57.5	9.4	-1.5 ±1.8	-0.4 ±1.8	81.0±3.0			1.56	1.3847	0.890	
	46460	47351	284.3	-9.3	8.85	F5V;UnK	-53.5	7.1	-3.8 ±1.8	0.2 ±2.2	81.8±5.2			1.10	2.7293	0.310	
544	46701		278.2	-4.1	3.16 (3)	K5III;VaR	-28.1	-18.4			73.3±0.5	-13.9		0.37			N Vel
	46701	47479	279.8	-4.0	5.30	A3IV;BiN	-29.0	-13.9	2.1 ±1.3	-4.4 ±1.3	72.6±2.2	7.0	-21.2±5.0	1.39	2.0313	0.670	
545	46891		199.3	46.5	6.50 (98)	A3Vnn;BiN	24.0	-45.3			83.5±3.4	26.0		1.44			
	46891	45873	201.7	43.3	8.51	F4IV;OtH	20.6	-43.2	-0.0 ±1.6	0.9 ±1.7	99.9±8.5	15.8	11.4±3.1	1.32	5.2020	0.180	
546	47017		284.0	-9.6	8.00 (273)	F5V;BiN	-54.2	8.8			81.4±4.2	30.9		1.33			
	47017	45594	281.5	-9.8	8.32	F3V;UnK	-49.3	9.4	-1.3 ±4.9	0.1 ±2.0	87.5±4.1			1.23	3.5300	0.810	
	47017	47351	284.3	-9.3	8.85	F5V;UnK	-53.5	7.1	-1.1 ±2.0	1.3 ±2.0	81.8±5.2			1.10	0.5950	1.000	
547	47053		182.3	47.8	6.76 (121)	F2V;EcB	-14.9	-4.7			85.2±6.7	-25.0		1.65			kn: 47046, 47054
	47053	47054	182.3	47.8	8.08	G;BiN	-12.5	-5.8	-2.4 ±1.8	1.1 ±1.6	84.5±40.2	-24.9	-0.1±4.2	1.27	0.0104	1.000	kn: 47046
548	47115		284.1	-9.5	6.55 (99)	A2V;UnK	-56.0	7.5			79.9±2.9	16.2		1.48			
	47115	47017	284.0	-9.6	8.00	F5V;BiN	-54.2	8.8	-1.7 ±1.9	-1.2 ±1.9	81.4±4.2	30.9	-14.7±40.4	1.33	0.1822	1.000	
	47115	47335	285.6	-10.7	7.39	A9IV/V;UnK	-57.5	9.4	0.5 ±1.8	-1.3 ±1.8	81.0±3.0			1.56	2.6879	0.910	
	47115	47351	284.3	-9.3	8.85	F5V;UnK	-53.5	7.1	-2.6 ±1.8	0.2 ±1.8	81.8±5.2			1.10	0.4189	1.000	
549	47231		153.8	43.5	6.41 (90)	G5;BiN	33.4	1.5			97.7±5.4	8.8		1.69			
	47231	46170	154.9	42.2	8.50	G0;OtH	26.9	-6.8	6.3 ±2.4	8.4 ±2.4	97.7±8.3	2.0	7.0±0.9	1.26	2.7203	1.000	

Table 5—Continued

Indx	Pri	Cmp	ℓ	b	V	Type	μ_l	μ_b	$\Delta\mu_\ell^{cor}$	$\Delta\mu_b^{cor}$	d	v_r	Δv_r^{cor}	$\mathcal{M}$	$\Delta\theta d_p$	Prob	Comment
			deg	deg	mag		............mas yr^{-1}............				pc	....km s^{-1}....		$M_\odot$	pc		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
550	47335		285.6	-10.7	7.39 (189)	A9IV/V;UnK	-57.5	9.4			81.0±3.0			1.56			
	47335	47017	284.0	-9.6	8.00	F5V;BiN	-54.2	8.8	-3.0 ±2.0	0.7 ±1.9	81.4±4.2	30.9		1.33	2.6871	0.960	
	47335	47351	284.3	-9.3	8.85	F5V;UnK	-53.5	7.1	-3.8 ±1.9	2.3 ±1.9	81.8±5.2			1.10	2.6425	0.580	
551	47399		178.8	48.4	8.77 (405)	F8V;SpB	6.9	-6.6			72.1±4.9	-9.0		1.00			
	47399	47851	180.3	49.5	9.80	F0;UnK	6.1	-2.3	1.1 ±1.6	-3.8 ±1.5	72.6±15.7			0.83	1.9632	1.000	
552	50325		178.7	55.4	7.36 (183)	F5;BiN	15.3	26.8			55.8±1.8	10.2		1.19			
	50325	50327	178.7	55.4	8.72	F8;UnK	14.8	27.6	0.5 ±1.6	-0.8 ±1.5	50.1±2.3			0.88	0.0291	1.000	
553	50520		287.5	-6.5	5.66 (48)	A1V;BiN	-28.2	-4.4			80.3±3.2	19.2		2.63			
	50520	51797	288.7	-5.1	8.11	F0;UnK	-18.7	-3.1	-10.5 ±6.0	-2.6 ±5.9	72.1±25.5			1.12	2.5259	0.110	
554	50698		252.2	38.9	7.66 (228)	A5;UnK	-6.5	-47.8			97.8±9.6			1.50			
	50698	51950	254.2	42.9	8.43	F8;UnK	-5.1	-47.8	-2.6 ±1.7	0.1 ±2.2	99.9±9.7			1.25	7.2967	0.190	
555	51177		286.9	-3.7	7.57 (217)	F8V;BiN	-27.8	-120.1			76.5±3.2	7.3		1.29			
	51177	51166	286.8	-3.7	8.95	G5;UnK	-26.2	-119.9	-1.6 ±2.0	-0.1 ±2.0	70.5±5.0			0.87	0.0238	1.000	
556	51319		292.2	-12.0	8.80 (409)	F5/F6V;UnK	-42.5	-8.2			98.0±7.0			1.19			
	51319	49440	289.9	-12.0	9.31	F8V;UnK	-37.9	-3.7	-4.4 ±2.2	-4.1 ±2.1	99.9±8.5			1.01	3.8229	0.170	
557	51536		173.9	57.5	8.04 (283)	F2;OtH	-10.0	-21.5			93.2±6.9	15.6		1.38			
	51536	51726	173.3	57.9	9.22	G0;UnK	-4.4	-11.9	-5.1 ±1.4	-9.9 ±1.4	95.2±10.3			1.08	0.8203	1.000	
558	51608		292.8	-12.3	8.40 (345)	G1V;UnK	-25.1	-68.6			66.9±2.7			0.98			kn: 51611
	51608	51611	292.8	-12.4	9.02	G3V;UnK	-24.6	-69.9	-0.5 ±2.1	1.3 ±2.0	66.4±3.3			0.90	0.0160	1.000	
559	52702		170.6	59.7	7.91 (261)	F5V;OtH	67.8	-126.1			63.7±2.9	25.9		1.08			
	52702	52510	178.8	60.8	8.31	G0;BiN	42.5	-137.3	2.8 ±1.6	2.6 ±1.6	59.8±3.3	-2.9	29.3±1.5	0.92	4.6753	0.130	
560	52761		218.8	61.0	9.16 (440)	G0;UnK	-4.2	-33.8			73.3±7.1			0.93			
	52761	51677	222.3	56.8	9.51	G5;EcB	-8.1	-38.4	2.1 ±1.7	4.7 ±2.6	71.9±6.9	21.5		0.87	5.8693	0.350	
561	52763		242.4	53.9	7.13 (166)	A2;OtH	-10.0	-53.4			95.5±4.9	22.0		1.34			
	52763	52455	244.0	51.9	7.66	A2;OtH	-19.1	-51.0	7.1 ±1.6	-0.4 ±1.6	96.2±6.6	14.2	8.6±5.1	1.51	3.7760	0.110	
562	52792		264.1	37.7	7.67 (233)	F7II/I;BiN	-66.4	-100.0			83.2±6.2	29.5		1.07			kn: 52793
	52792	52793	264.1	37.8	8.89	-;SpB	-71.0	-109.2	4.6 ±2.0	9.1 ±2.0	71.4±8.7	29.5	-0.0±3.1	0.94	0.0123	1.000	
563	53226		274.5	26.2	8.00 (274)	F8V;OtH	-49.2	-69.8			72.4±3.6	28.6		1.25			
	53226	53314	277.3	22.0	8.60	G0/G1V;UnK	-53.4	-62.1	-0.8 ±2.1	-0.5 ±2.0	73.6±4.3			0.99	6.1577	0.980	
564	53241		290.8	-4.8	9.39 (446)	G1III/;UnK	18.8	-1.3			99.9±11.3			0.97			
	53241	54133	291.3	-3.1	9.67	G5;UnK	19.1	-7.9	-0.3 ±2.5	6.5 ±2.6	99.9±41.3			0.88	3.0732	0.640	
565	53524		292.8	-8.1	7.36 (184)	A8III;UnK	-45.6	-6.6			90.4±3.4	10.1		1.60			
	53524	55334	295.4	-9.1	8.14	F2V;UnK	-43.1	-5.5	-3.5 ±2.0	-1.0 ±1.9	86.1±4.1	9.5	-0.2±1.7	1.29	4.3894	0.140	
566	54573		233.2	64.0	7.51 (207)	F2V;OtH	-10.2	-38.5			74.3±4.7	-4.4		1.33			
	54573	55674	237.6	66.9	7.57	F8;OtH	-9.4	-26.4	-3.0 ±1.6	-10.6 ±1.6	75.2±4.1	-17.1	11.9±2.3	1.34	4.4824	0.350	
567	54845		212.7	68.0	8.51 (367)	F5;UnK	41.5	-80.9			97.8±9.6			1.19			

Table 5—Continued

Indx	Pri	Cmp	ℓ	b	V	Type	μ_l	μ_b	$\Delta\mu_\ell^{cor}$	$\Delta\mu_b^{cor}$	d	v_r	Δv_r^{cor}	$\mathcal{M}$	$\Delta\theta d_p$	Prob	Comment
			deg	deg	mag		mas yr^{-1}				pc	km s^{-1}		$M_\odot$	pc		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	54845	54217	204.6	66.6	9.69	G0;OtH	50.5	-73.6	0.8 ±2.1	-1.5 ±2.0	87.5±8.9	13.6		0.86	5.8573	0.940	
568	54989		286.9	11.6	8.41 (347)	F7/F8V;OtH	-133.7	-16.5			81.6±7.1	17.1		1.20			
	54989	54401	286.9	8.5	9.82	G4p;UnK	-134.8	-17.9	1.2 ±2.3	3.8 ±2.3	74.4±6.3			0.88	4.4364	0.160	
569	55076		134.7	45.7	8.23 (319)	G0;OtH	70.3	-1.8			77.6±4.2	-7.4		1.22			
	55076	58483	128.7	45.0	8.33	F5;VaR	68.4	5.6	0.2 ±1.7	-2.5 ±1.8	76.2±4.3	-14.1	4.8±0.5	1.08	5.8275	0.970	
570	55399		283.0	23.6	7.60 (222)	F3V;OtH	37.3	-44.5			86.7±6.5	14.6		1.56			
	55399	54743	279.2	27.1	8.45	F6/F7V;UnK	39.7	-47.0	0.8 ±1.9	1.6 ±2.0	70.3±4.8			1.09	7.3985	0.130	
571	55584		200.6	70.5	8.82 (413)	F8;UnK	5.7	29.4			91.7±7.6			1.05			
	55584	55997	195.2	71.5	10.99	F8;UnK	0.2	18.2	2.6 ±2.2	11.7 ±2.1	89.0±32.9			0.76	3.2459	0.860	kn: 55998
572	55827		294.8	-5.6	8.86 (415)	G0V;OtH	-90.2	-10.1			91.0±5.5	1.4		1.10			
	55827	55064	294.3	-7.0	9.39	G0V;OtH	-97.9	-7.4	7.8 ±2.0	-2.6 ±2.0	89.4±7.7	12.4	-10.5±0.3	0.87	2.3843	0.150	
573	56052		178.4	70.1	8.68 (393)	G5;OtH	37.4	-90.7			96.6±9.2	4.2		1.30			
	56052	56568	179.9	71.7	9.93	G0;UnK	28.1	-89.0	7.0 ±2.3	-2.8 ±2.3	97.8±11.7			0.85	2.8833	0.850	
574	56633		274.2	48.9	4.70 (12)	B9.5Vn;OtH	-56.3	-21.3			86.0±1.7	1.0		3.11			21 θ Crt
	56633	56735	274.7	49.0	8.13	F5;UnK	-61.5	-19.8	5.1 ±1.4	-1.2 ±1.4	88.7±6.7			1.25	0.4697	0.870	
575	56673		296.5	-7.7	6.62 (104)	F5IV;UnK	-39.1	-17.1			93.8±4.3			1.53			
	56673	56379	296.4	-8.3	6.69	B9Vne;VaR	-35.7	-11.9	-3.5 ±1.8	-5.2 ±1.8	96.9±4.0	9.1		2.77	1.0072	0.170	
576	56920		221.0	73.6	6.88 (133)	A3;OtH	-20.0	-61.3			68.3±2.8	-0.2		1.57			
	56920	55547	214.8	69.9	8.47	F8;UnK	-14.8	-61.8	1.2 ±1.6	-1.1 ±1.8	71.7±5.1			1.10	4.8988	0.180	
577	57135		142.1	59.2	8.88 (417)	F8;UnK	149.9	-9.2			90.8±8.6			1.00			
	57135	57115	144.2	60.9	10.11	K2;UnK	148.6	-25.5	1.1 ±2.1	11.6 ±2.2	76.6±9.2			0.83	3.1416	0.130	
578	57375		292.9	8.9	8.09 (294)	F1V;UnK	-27.8	-21.5			96.0±7.8			1.37			
	57375	57197	292.6	9.0	8.94	F4V;UnK	-21.8	-30.2	-6.0 ±2.2	8.7 ±1.9	90.8±10.1			1.14	0.6100	0.630	
579	57626		297.7	-8.2	8.57 (375)	F5V;BiN	-53.1	-8.8			91.8±5.9	17.7		1.20			
	57626	61268	301.3	-6.0	9.37	A9V;UnK	-54.8	-13.1	-0.7 ±2.7	2.4 ±2.6	86.9±18.8			0.84	6.6987	0.740	
580	57670		178.6	74.7	5.73 (51)	F5IV;SpB	46.9	-109.2			69.4±1.6	-22.6		1.86			
	57670	58405	189.7	77.7	8.77	G0;UnK	36.0	-110.8	-6.9 ±2.4	-1.9 ±2.3	74.0±6.1			1.06	4.8974	0.660	
581	57858		262.6	66.9	7.40 (190)	K0;BiN	26.9	-44.3			96.5±6.7	-4.4		1.10			kn: 57856
	57858	57856	262.6	66.9	7.93	K0III-;BiN	30.6	-41.6	-3.7 ±2.0	-2.8 ±2.0	98.9±7.7	-3.9	-0.5±0.2	1.39	0.0143	1.000	
582	57950		295.0	5.2	8.26 (324)	F2IV/V;UnK	-35.6	-16.7			98.1±7.8	8.0		1.33			
	57950	58528	296.0	5.1	8.54	F5V;VaR	-36.6	-18.1	0.7 ±2.0	1.5 ±2.0	99.9±11.7	7.7	0.0±1.8	1.24	1.7719	0.160	
	57950	59716	297.8	6.7	8.45	F5V;UnK	-35.5	-15.9	-1.0 ±2.3	-1.1 ±2.3	96.5±12.2			1.21	5.4061	0.920	kn: 59721
583	58079		140.1	61.0	8.80 (410)	G5;UnK	56.9	114.4			50.4±2.4			0.87			
	58079	59261	137.3	63.4	9.47	K0;UnK	54.9	121.6	-3.4 ±1.9	-4.1 ±2.5	57.3±4.5			0.83	2.4166	0.120	
584	58167		294.8	7.8	8.30 (330)	F3IV;VaR	-32.2	-18.7			92.5±7.9	7.7		1.30			
	58167	58220	295.9	3.3	8.48	F3V;UnK	-31.8	-17.3	-0.8 ±2.3	0.1 ±2.0	98.9±8.1	8.0	0.1±1.8	1.24	7.4942	0.390	

Table 5—Continued

Indx	Pri	Cmp	ℓ	b	V	Type	μ_l	μ_b	$\Delta\mu_\ell^{cor}$	$\Delta\mu_b^{cor}$	d	v_r	Δv_r^{cor}	$\mathcal{M}$	$\Delta\theta d_p$	Prob	Comment
			deg	deg	mag		mas yr^{-1}				pc	km s^{-1}		$M_\odot$	pc		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
585	58406		146.0	66.9	6.93 (140)	F2;OtH	108.7	-71.9			55.0±1.8	-1.9		1.33			
	58406	59024	141.6	66.3	7.69	F5;OtH	110.8	-60.6	2.5 ±1.5	-3.5 ±1.5	53.5±1.8	1.1	-3.7±4.1	1.15	1.8007	0.500	
586	58423		285.6	43.3	8.74 (400)	G0V;UnK	-113.7	-17.2			94.0±8.9			1.01			
	58423	58084	282.7	46.6	10.66	K5V;UnK	-109.2	-21.8	-4.0 ±2.7	0.9 ±3.0	96.4±15.6			0.81	6.3282	0.610	
587	58647		294.8	12.1	9.13 (437)	G1V;UnK	-115.1	-29.9			96.5±19.8			1.03			
	58647	58226	294.1	11.2	9.16	G3IV/V;UnK	-121.3	-33.4	6.2 ±2.7	3.2 ±2.5	84.8±9.7			0.94	1.8919	0.140	
588	58751		284.1	50.3	7.44 (197)	F5;OtH	36.9	-8.7			59.2±2.2	-12.7		1.29			
	58751	58722	283.9	50.4	8.53	G0;UnK	35.8	-6.4	1.0 ±1.6	-2.2 ±1.6	55.1±3.0			0.89	0.0951	1.000	
589	58813		294.0	17.9	8.07 (288)	G2/G3I;BiN	93.4	39.0			54.5±4.2	6.0		1.01			kn: 58815
	58813	58815	294.0	17.9	8.74	G9V;BiN	97.2	35.7	-3.8 ±2.2	3.2 ±2.2	55.4±22.7	5.5	0.5±0.3	0.90	0.0062	1.000	
590	58936		284.2	51.9	8.37 (338)	F8;UnK	-23.0	-20.5			79.6±6.5			1.17			
	58936	60236	291.2	50.7	8.60	F0p;BiN	-17.7	-27.7	-6.3 ±2.5	9.1 ±1.7	67.2±10.9	-15.5		0.98	6.2541	0.120	kn: 60237
591	58961		159.9	75.0	8.44 (353)	F5;BiN	5.0	15.6			78.6±6.5	-3.8		1.06			
	58961	58449	154.3	71.3	10.76	G0;UnK	1.4	14.8	1.9 ±1.6	0.5 ±1.6	95.4±19.4			0.81	5.4702	0.130	
592	59243		300.8	-16.1	6.85 (130)	A6III/;UnK	-41.8	-14.8			93.9±3.1			1.50			
	59243	58400	300.1	-15.3	10.61	K4Ve;YnG	-38.7	-11.3	-3.1 ±2.9	-3.4 ±2.8	90.4±12.4	10.2		0.77	1.6806	0.330	
	59243	58490	299.7	-13.5	11.15	K4Ve;YnG	-41.7	-15.3	-0.1 ±2.9	0.5 ±3.0	99.9±17.6	13.1		0.65	4.5958	1.000	
	59243	59093	300.7	-16.1	7.48	A9III/;UnK	-38.1	-15.4	-3.7 ±1.8	0.6 ±1.8	99.9±5.2			1.46	0.1754	0.560	
593	59340		297.0	7.3	8.08 (290)	F3V;OtH	56.7	-29.1			97.6±6.9	32.6		1.33			
	59340	59717	297.2	10.7	8.52	F8V;OtH	57.7	-29.0	-1.2 ±1.9	-4.3 ±1.9	91.3±10.8	35.2	-3.4±3.5	1.07	5.8958	0.210	
594	59716		297.8	6.7	8.45 (356)	F5V;UnK	-35.5	-15.9			96.5±12.2			1.21			kn: 59721
	59716	59603	297.7	5.6	8.56	F2V;VaR	-32.9	-14.3	-2.6 ±2.4	-1.6 ±2.4	99.9±11.0	7.1		1.26	1.8902	0.740	
	59716	60348	298.3	11.6	8.80	F5V;BiN	-33.7	-15.7	-1.8 ±2.2	0.0 ±2.8	93.7±15.3	6.1		1.15	8.2462	0.230	
	59716	61049	300.2	4.6	8.59	F7V;UnK	-38.7	-16.5	3.2 ±2.5	0.6 ±2.4	97.0±9.2	6.5		1.16	5.4457	0.490	
595	59865		299.0	-0.6	6.97 (145)	G0V;OtH	-144.2	-12.2			71.7±2.6	-10.0		1.57			
	59865	59913	299.1	-0.6	8.97	G5/G6I;OtH	-145.1	-10.9	1.0 ±2.1	-1.3 ±2.0	63.7±4.0	-9.9	-0.2±0.3	0.94	0.1104	1.000	
596	59898		299.4	-3.1	6.06 (68)	A0V;OtH	-36.9	-14.2			96.0±3.0	21.0		2.72			
	59898	60183	299.8	-3.2	6.20	B9V;OtH	-38.5	-17.4	1.3 ±1.8	3.3 ±1.8	93.9±3.0	-8.3	29.2±5.2	2.98	0.6304	0.940	
	59898	60913	300.6	-2.1	9.04	G5V;ClN	-34.0	-13.2	-3.9 ±2.0	-1.8 ±2.0	98.7±9.5	5.3	15.3±7.1	0.88	2.4589	0.570	
597	59960		298.2	6.6	7.80 (250)	F5V;ClN	-39.6	-18.1			92.1±6.0	11.1		1.39			
	59960	57950	295.0	5.2	8.26	F2IV/V;UnK	-35.6	-16.7	-2.3 ±2.1	-1.0 ±2.1	98.1±7.8	8.0	4.2±2.4	1.33	5.6394	0.260	
	59960	59716	297.8	6.7	8.45	F5V;UnK	-35.5	-15.9	-3.9 ±2.3	-2.3 ±2.3	96.5±12.2			1.21	0.7476	0.950	kn: 59721
	59960	61049	300.2	4.6	8.59	F7V;UnK	-38.7	-16.5	-1.8 ±2.1	-0.6 ±2.1	97.0±9.2	6.5	4.3±2.4	1.16	4.5329	0.490	
598	59977		252.4	79.8	9.38 (445)	G0;UnK	-45.2	-53.2			89.4±11.1			0.95			
	59977	59754	259.9	77.3	11.05	K2;UnK	-57.8	-41.4	6.6 ±1.9	-6.3 ±2.1	81.2±16.0			0.74	4.5504	0.480	
599	60014		172.7	80.9	6.68 (116)	A5V;OtH	17.3	-4.4			81.6±2.9	-6.9		1.51			

Table 5—Continued

Indx	Pri	Cmp	ℓ	b	V	Type	μ_l	μ_b	$\Delta\mu_\ell^{cor}$	$\Delta\mu_b^{cor}$	d	v_r	Δv_r^{cor}	$\mathcal{M}$	$\Delta\theta d_p$	Prob	Comment
			deg	deg	mag		.... mas yr^{-1}			....	pc	.... km s^{-1}		$M_\odot$	pc		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	60014	61205	148.0	80.9	9.59	G0;UnK	16.7	3.6	-0.3 ±2.3	-0.7 ±2.3	71.3±6.4	-2.2	-5.2±2.6	0.91	5.5392	0.500	
600	60183		299.8	-3.2	6.20 (73)	B9V;OtH	-38.5	-17.4			93.9±3.0	-8.3		2.98			
	60183	59502	298.6	-0.9	6.98	A2V;VaR	-39.1	-15.7	0.2 ±1.8	-1.0 ±1.8	99.9±4.3	7.7	-15.9±1.8	1.47	4.1757	0.450	
601	60513		299.4	3.7	8.52 (369)	F3V;VaR	-28.0	-14.2			99.8±8.3	6.8		1.29			
	60513	61049	300.2	4.6	8.59	F7V;UnK	-38.7	-16.5	10.5 ±2.0	2.1 ±2.0	97.0±9.2	6.5	0.0±1.8	1.16	2.0101	0.270	
602	60561		300.9	-9.8	6.61 (103)	A0V;UnK	-39.1	-15.0			91.1±2.6	7.9		2.82			
	60561	61017	301.4	-10.2	7.08	A6IV;UnK	-38.5	-14.0	-0.8 ±1.8	-1.0 ±1.8	99.9±5.0			1.73	0.8801	0.190	
603	60927		153.7	81.1	7.57 (218)	F8;BiN	78.8	-82.7			90.7±5.6	3.5		1.33			
	60927	60955	180.4	84.4	9.47	G0;UnK	27.6	-110.0	5.4 ±1.9	0.5 ±2.0	91.1±10.3			0.98	7.4091	0.120	
604	60958		297.5	31.5	8.57 (376)	F8V;UnK	-49.1	-3.5			68.5±3.9			1.10			
	60958	59938	294.8	29.1	9.48	G9V;BiN	-50.3	-0.5	0.9 ±3.1	-4.5 ±3.1	73.6±9.4	14.8		0.93	3.9451	0.290	
605	61087		300.6	0.9	8.00 (275)	F6V;OtH	-35.5	-13.2			97.5±6.8	12.1		1.33			
	61087	60913	300.6	-2.1	9.04	G5V;ClN	-34.0	-13.2	-1.5 ±2.1	1.4 ±2.1	98.7±9.5	5.3	7.1±5.2	0.88	5.1336	0.540	
	61087	61049	300.2	4.6	8.59	F7V;UnK	-38.7	-16.5	3.4 ±2.1	1.6 ±2.1	97.0±9.2	6.5	5.3±2.1	1.16	6.3301	0.700	
606	61120		262.7	82.8	7.92 (265)	F3;OtH	-51.3	-50.1			89.3±6.2	2.4		1.33			
	61120	59977	252.4	79.8	9.38	G0;UnK	-45.2	-53.2	3.6 ±1.4	-4.7 ±1.4	89.4±11.1			0.95	5.2456	0.640	
607	61135		284.8	74.3	8.09 (295)	F0;UnK	-58.4	-13.3			88.3±7.2			1.39			
	61135	61416	287.1	75.3	9.20	F8;UnK	-56.5	-8.0	-2.2 ±1.6	-2.8 ±1.6	90.1±10.5			1.09	1.8039	0.960	
608	61595		300.0	22.0	8.08 (291)	G3V;BiN	-157.7	-14.7			56.3±4.0	-13.7		0.99			
	61595	63207	304.0	20.3	9.74	K0V;BiN	-153.9	-17.1	-0.5 ±1.9	4.7 ±2.1	48.5±4.1	-44.7	28.4±7.7	0.77	3.9853	0.520	
609	61729		300.4	22.4	8.56 (374)	G6V;BiN	-88.3	4.6			87.6±8.9	24.5		1.03			
	61729	61999	301.2	19.4	9.48	G3V;UnK	-92.7	6.8	3.8 ±1.6	1.3 ±2.0	93.3±10.3			0.95	4.8391	0.240	
610	61937		294.5	73.1	6.22 (75)	A7Vn;BiN	-104.3	-14.4			62.9±1.1	9.0		1.44			27 Vir
	61937	62350	298.5	74.2	8.66	G5;OtH	-111.0	-8.7	5.3 ±1.4	0.8 ±1.4	65.4±4.1	-17.8	26.1±2.5	1.03	1.7045	0.960	
611	62144		301.3	25.6	8.69 (395)	K0V;UnK	-89.7	-46.1			97.6±11.7			0.98			
	62144	62352	301.9	22.5	9.02	G3V;UnK	-94.5	-45.6	4.7 ±1.8	-0.5 ±2.4	96.9±13.0			0.98	5.3154	0.160	
612	62384		290.4	85.4	8.38 (342)	G5;SpB	-8.8	-10.9			73.0±4.5	-0.9		1.07			
	62384	62805	308.5	88.2	8.87	F8V;OtH	-11.9	-6.8	0.2 ±1.5	-0.7 ±1.5	74.6±6.5	-4.4	3.3±3.4	1.04	3.8132	1.000	
613	62437		124.4	67.0	6.82 (127)	F0;SpB	100.3	-0.1			67.2±2.5	8.5		1.45			
	62437	63324	119.9	67.2	10.15	G8IV;UnK	98.6	-0.6	2.2 ±2.0	7.6 ±2.0	70.7±14.0			0.81	2.0667	0.770	
614	62763		115.0	89.6	4.93 (19)	G0IIIp;BiN	8.4	9.7			89.1±1.8	-0.7		1.61			31 Com
	62763	61147	184.9	85.2	7.55	F0V;ClN	13.3	-4.9	-1.4 ±1.2	0.2 ±1.3	86.1±5.0	-0.6	0.1±3.4	1.43	7.3287	0.170	
615	64444		307.8	27.9	7.76 (244)	F5/F6V;BiN	-269.7	-248.9			77.0±6.9	-5.7		1.06			kn: 64443
	64444	64443	307.8	27.9	9.76	K0;UnK	-268.4	-248.2	-1.3 ±2.1	-0.8 ±2.1	58.8±7.5			0.81	0.0117	1.000	
616	64451		117.6	58.5	8.66 (390)	F7V;BiN	64.3	-21.2			82.5±6.1	-9.4		1.05			kn: 64454
	64451	61886	125.3	56.3	8.79	G0;UnK	62.0	-27.7	1.0 ±1.8	-1.5 ±2.0	71.4±4.8			0.99	6.7034	0.240	

Table 5—Continued

Indx	Pri	Cmp	ℓ	b	V	Type	μ_l	μ_b	$\Delta\mu_\ell^{cor}$	$\Delta\mu_b^{cor}$	d	v_r	Δv_r^{cor}	$\mathcal{M}$	$\Delta\theta d_p$	Prob	Comment
			deg	deg	mag		.... mas yr^{-1}				pc	... km s^{-1} ...		$M_\odot$	pc		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	64451	64454	117.6	58.5	10.36	-;BiN	67.7	-20.0	-3.4 ±3.2	-1.2 ±3.3	90.4±27.0	-10.7	1.3±0.7	0.85	0.0103	1.000	
617	64779		342.3	80.7	6.43 (91)	F0V;BiN	-69.8	83.4			85.4±3.6	-32.3		1.86			kn: 64789
	64779	64789	342.7	80.7	7.57	A2;BiN	-71.7	88.3	2.5 ±1.3	-4.4 ±1.2	97.9±6.4	-25.4	-6.9±3.1	1.62	0.0842	0.980	
618	65266		312.2	39.4	8.14 (302)	G1/G2V;UnK	-22.1	12.9			76.1±8.1			1.07			kn: 65269
	65266	64670	309.9	38.5	8.32	F5V;OtH	-26.4	5.9	3.4 ±2.3	6.2 ±2.1	75.3±3.7	0.8		1.20	2.5972	0.940	
619	65426		308.2	11.0	7.01 (153)	A2V;UnK	-35.8	-14.1			97.9±5.3	3.1		1.48			
	65426	65089	307.8	13.4	7.95	A7/A8V;UnK	-35.0	-17.4	-0.7 ±1.6	2.9 ±1.6	96.5±7.3	3.0	-0.1±1.7	1.25	4.0599	0.340	
620	65466		11.5	81.7	5.75 (52)	A3IV;OtH	-12.3	5.0			87.5±2.2	-1.5		1.58			
	65466	65508	24.2	82.2	9.14	F8;UnK	-10.0	6.1	-0.8 ±1.5	1.5 ±1.6	90.5±8.4	-2.6	1.0±2.6	1.01	2.7974	0.960	
621	65539		311.4	29.8	6.85 (131)	F0V;UnK	-49.5	-9.5			86.6±4.9			1.60			
	65539	66273	314.1	32.0	8.49	G3V;BiN	-52.3	-6.1	3.3 ±3.0	-1.6 ±2.8	86.9±14.8	-6.8		1.04	4.8824	0.380	
622	65603		116.8	52.0	6.64 (107)	F0;BiN	76.7	-18.9			71.6±1.8	-15.9		1.56			kn: 65613
	65603	65613	116.8	52.0	7.01	F0;BiN	78.4	-17.8	-1.7 ±1.8	-1.1 ±1.9	68.7±1.7	-15.6	-0.3±0.6	1.38	0.0239	1.000	
623	65728		114.5	56.6	5.40 (35)	A1Vn;BiN	84.2	-12.9			71.4±1.0	-3.0		2.86			kn: 65756
	65728	65756	114.4	56.6	7.94	F8;UnK	89.7	-8.1	-5.4 ±2.4	-4.7 ±2.5	73.4±3.5			8.95	0.0629	0.990	
624	65779		306.7	-3.5	8.54 (373)	F7/F8V;UnK	-125.1	30.0			86.1±7.3			1.07			kn: 65785
	65779	65785	306.7	-3.5	9.11	F7V;UnK	-124.0	28.1	-1.0 ±1.8	1.8 ±1.8	78.2±9.3			1.04	0.0113	1.000	
625	65892		320.0	55.1	6.10 (70)	F2V;BiN	46.3	-0.7			53.2±1.1	-9.0		1.55			72 Vir
	65892	65940	321.5	57.3	10.41	K2V;UnK	50.7	0.1	-3.9 ±2.2	-0.4 ±2.4	58.6±5.3			0.75	2.2020	0.430	
626	65899		7.6	80.0	8.58 (378)	F8;UnK	-26.4	-46.4			76.2±5.2	-36.0		1.10			
	65899	65884	2.6	79.5	10.01	G5;UnK	-28.8	-47.4	4.9 ±1.3	-2.0 ±1.3	71.9±6.4			0.83	1.3487	0.990	
627	66007		332.6	69.5	8.01 (279)	F8;OtH	-5.9	28.3			79.6±5.6	12.6		1.13			
	66007	66132	334.0	69.6	9.23	G5;UnK	-14.4	32.3	8.9 ±1.7	-4.0 ±1.8	74.4±9.0			0.93	0.6953	0.270	
628	66198		110.5	60.7	5.60 (45)	A0V;OtH	15.9	11.0			91.6±2.2	-7.0		2.87			81 UMa
	66198	63702	119.8	59.7	9.10	G;UnK	15.9	7.1	2.5 ±2.5	1.3 ±2.4	92.1±7.8			1.05	7.5151	0.670	
	66198	67005	104.9	63.2	6.02	A1V;OtH	13.0	13.9	1.0 ±2.4	-0.9 ±2.4	96.1±2.7	-6.5	-0.6±5.6	2.74	5.7360	0.700	
629	66285		308.7	4.0	8.34 (337)	F7/F8V;BiN	-35.6	-7.5			83.4±12.1	31.9		1.04			
	66285	64765	306.1	3.6	8.86	F0IV/V;UnK	-32.3	-5.0	0.4 ±2.3	-2.0 ±1.9	97.7±11.5			1.23	3.7151	0.690	
630	66749		319.2	43.5	7.89 (258)	F3V;UnK	-38.0	-1.5			85.1±4.7			1.29			
	66749	66717	319.3	44.0	8.49	F3V;OtH	-48.4	-2.8	10.4 ±1.9	1.5 ±1.9	85.7±6.2	4.2		1.23	0.6754	1.000	
631	67005		104.9	63.2	6.02 (67)	A1V;OtH	13.0	13.9			96.1±2.7	-6.5		2.74			
	67005	68637	98.1	62.6	6.16	A2V;OtH	10.6	15.9	0.2 ±1.5	-0.8 ±1.5	99.9±2.7	-9.5	2.6±3.5	2.70	5.3025	0.620	
	67005	69650	97.0	60.2	6.56	A4V;OtH	12.0	13.5	-1.7 ±1.5	1.0 ±1.6	93.3±2.8	-15.0	7.8±3.5	1.51	8.0756	0.270	
632	67136		334.0	63.1	8.19 (316)	F8;BiN	-28.3	24.1			96.0±10.8	-6.9		1.32			
	67136	66881	333.9	64.8	8.97	G0;UnK	-34.7	32.8	6.4 ±2.0	-8.3 ±2.0	98.2±10.4			1.13	2.8131	0.320	
633	67250		80.9	73.7	5.51 (41)	K0III+;BiN	70.7	116.5			97.2±3.1	-11.1		1.34			

Table 5—Continued

Indx	Pri	Cmp	ℓ	b	V	Type	μ_l	μ_b	$\Delta\mu_\ell^{cor}$	$\Delta\mu_b^{cor}$	d	v_r	Δv_r^{cor}	$\mathcal{M}$	$\Delta\theta d_p$	Prob	Comment
			deg	deg	mag		.... mas yr^{-1}	....			pc	.... km s^{-1}	....	$M_\odot$	pc		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	67250	67041	82.8	73.9	8.85	G5;UnK	78.8	118.5	-4.1 ±1.6	-4.2 ±1.6	95.2±9.6			0.97	0.9807	1.000	
634	67446		64.4	75.9	8.37 (339)	F5;BiN	10.4	21.3			85.9±8.3	-8.0		1.25			
	67446	67475	68.8	75.3	8.90	F8;UnK	9.3	22.8	3.0 ±2.7	-2.5 ±2.6	96.7±16.0			1.13	1.8700	0.790	kn: 67476
	67446	67476	68.8	75.3	10.30	F8;UnK	12.0	21.2	0.4 ±4.5	-0.9 ±4.5	83.5±13.7			0.85	1.8743	1.000	
635	67470		349.7	70.4	6.66 (111)	F8V;SpB	-93.9	117.6			59.7±1.9	21.3		1.43			
	67470	67673	348.9	69.2	6.90	F5III;OtH	-97.0	116.9	1.9 ±1.5	0.9 ±1.5	57.0±1.6	-2.7	23.5±1.4	1.40	1.2552	1.000	
636	67639		313.1	13.4	7.37 (187)	G6III:;BiN	-119.3	-0.9			75.2±4.5	4.7		1.18			kn: 67645
	67639	67645	313.1	13.4	7.47	F5V;BiN	-118.6	2.5	-0.7 ±1.5	-3.4 ±1.6	75.6±4.4	4.8	-0.1±0.3	1.09	0.0112	1.000	
637	67828		335.2	59.8	8.61 (385)	G5;UnK	-35.2	34.7			84.5±8.4			0.94			
	67828	66881	333.9	64.8	8.97	G0;UnK	-34.7	32.8	-1.5 ±1.8	3.1 ±2.9	98.2±10.4			1.13	7.3039	0.520	
638	68323		315.2	15.8	7.38 (188)	F8V;OtH	-69.1	-50.9			75.3±3.5	6.9		1.30			
	68323	68194	314.9	15.9	8.26	F6/F7V;UnK	-77.4	-58.3	8.5 ±1.6	7.3 ±1.5	70.9±4.4			1.12	0.3529	0.470	
639	68413		311.1	0.3	6.49 (96)	F1III-;OtH	-70.9	-15.3			59.3±1.8	6.1		1.55			
	68413	68994	311.9	-0.0	7.76	F4V;OtH	-75.7	-7.4	4.5 ±2.0	-7.8 ±2.0	64.1±3.3	-5.2	11.0±2.7	1.22	0.8922	0.140	
640	68563		91.0	66.5	8.04 (284)	G0;OtH	28.9	11.3			71.7±2.9	-14.4		1.18			
	68563	67900	84.4	70.9	9.52	G0;UnK	22.4	19.9	3.2 ±1.6	-2.4 ±1.6	75.5±6.3			0.86	6.2363	0.150	
641	68576		68.2	72.5	7.23 (175)	F5;BiN	-66.3	57.6			78.8±4.0	31.0		1.44			
	68576	68069	71.1	73.4	9.18	G5III;UnK	-67.2	56.5	2.5 ±2.0	3.0 ±1.9	89.1±9.4			0.89	1.7648	0.910	
642	68830		326.7	41.4	8.15 (306)	F8+...;UnK	21.5	-57.0			80.6±7.2			1.11			kn: 68833
	68830	68833	326.7	41.3	8.76	G0;UnK	20.6	-53.1	0.9 ±2.0	-3.9 ±2.0	78.2±7.3			0.98	0.0122	1.000	
643	68903		39.3	73.4	8.10 (297)	F2;UnK	26.1	41.9			87.1±4.7			1.35			
	68903	68384	40.8	74.8	9.32	F8;UnK	20.1	34.8	7.2 ±1.6	7.0 ±1.8	90.3±10.8			0.96	2.2792	0.490	
644	69227		75.0	69.4	7.97 (269)	K0;BiN	-42.3	25.2			96.1±8.0	5.0		1.25			
	69227	69166	73.2	70.0	8.95	G5III;OtH	-37.8	31.1	-5.1 ±1.4	-7.3 ±1.4	98.9±9.6	-17.1	22.5±0.3	0.99	1.4338	0.970	
645	69650		97.0	60.2	6.56 (101)	A4V;OtH	12.0	13.5			93.3±2.8	-15.0		1.51			
	69650	69917	95.6	60.2	6.91	A2;OtH	11.3	13.5	0.0 ±1.4	0.3 ±1.4	97.4±3.6	-10.0	-5.1±5.0	1.32	1.1484	1.000	
646	69818		94.9	60.9	6.19 (72)	A2IV;OtH	10.8	16.3			90.3±2.4	-9.0		2.47			
	69818	69650	97.0	60.2	6.56	A4V;OtH	12.0	13.5	-0.4 ±1.6	2.1 ±1.6	93.3±2.8	-15.0	6.0±3.5	1.51	2.0013	0.340	
647	70051		47.8	70.3	6.45 (93)	A5III;VaR	-5.6	9.8			92.9±3.5	1.3		1.35			
	70051	70609	39.8	68.9	8.06	F8;OtH	-7.3	9.2	0.6 ±1.4	-0.1 ±1.4	87.3±5.8	23.2	-21.9±1.3	1.11	5.0594	0.960	
648	70202		318.2	12.1	8.44 (354)	G2IV;YnG	-39.7	-13.1			72.6±5.7	4.8		1.00			
	70202	69781	316.7	10.6	8.67	G0V;EcB	-29.2	-13.2	-10.1 ±1.7	0.3 ±1.6	72.2±4.7	-14.6	19.8±10.0	0.96	2.5785	0.420	
649	70649		348.4	55.3	8.02 (281)	G0;OtH	25.3	-87.4			74.5±4.9	8.6		0.97			
	70649	70845	348.2	54.3	10.93	-;UnK	26.9	-98.2	-1.3 ±1.7	11.3 ±1.8	71.3±27.3			0.69	1.3129	0.970	
650	70894		349.0	54.7	5.96 (62)	A5IV;OtH	16.9	-4.6			79.3±3.1	-9.2		1.33			
	70894	71141	353.3	56.3	7.40	F2;BiN	16.1	-4.9	1.6 ±1.5	-0.1 ±1.5	70.1±3.9	-11.3	2.3±4.4	1.29	4.0634	0.420	

Table 5—Continued

Indx	Pri	Cmp	ℓ	b	V	Type	μ_l	μ_b	$\Delta\mu_\ell^{cor}$	$\Delta\mu_b^{cor}$	d	v_r	Δv_r^{cor}	$\mathcal{M}$	$\Delta\theta d_p$	Prob	Comment
			deg	deg	mag		....	mas yr^{-1}	....		pc	.... km s^{-1}		$M_\odot$	pc		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
651	71132		9.1	63.0	7.03 (159)	F5III;OtH	-12.1	-37.6			88.7±5.3	-14.4		1.60			
	71132	71635	16.4	63.2	9.17	G0;UnK	-8.5	-37.9	-5.8 ±1.4	1.9 ±1.4	88.4±9.8			0.99	5.1478	0.390	
652	71162		327.4	27.1	8.75 (401)	G3V;UnK	-123.6	-7.0			69.7±6.8			0.98			
	71162	72054	330.4	27.1	10.23	G5;UnK	-125.5	-4.1	3.0 ±3.1	-0.1 ±2.6	87.8±21.1			0.85	3.2336	0.720	
653	71347		344.1	48.5	7.73 (242)	F5;BiN	-15.2	-14.8			77.5±4.9	-30.4		1.22			
	71347	72309	349.1	48.0	8.41	F5;OtH	-9.5	-12.7	-1.9 ±1.7	-2.0 ±1.6	81.6±5.8	-19.4	-11.2±0.7	1.10	4.5114	0.200	
654	71640		323.5	16.6	8.90 (418)	G3V;UnK	-43.3	3.0			73.1±6.3			0.94			
	71640	71558	325.0	20.1	9.38	G3V;UnK	-37.7	3.2	-5.0 ±2.0	1.4 ±2.5	79.7±8.4			0.88	4.8675	0.820	
655	71726		47.3	66.0	7.70 (236)	G0;OtH	-45.0	-94.0			53.5±1.7	-12.2		1.05			
	71726	71737	47.5	65.9	7.98	G2IV;OtH	-45.7	-96.0	0.5 ±2.1	2.1 ±2.2	51.3±2.4	-12.0	-0.2±0.1	1.14	0.0791	1.000	
656	71762		15.6	62.5	4.49 (7)	B9p+..;BiN	19.4	-1.8			93.7±11.9	-6.0		2.82			29 pi01 Boo
	71762	71930	14.2	61.6	9.12	G0;UnK	16.4	1.7	2.9 ±1.3	-3.3 ±1.3	88.4±10.2			0.97	1.8868	0.220	
657	71843		33.2	65.1	7.66 (229)	F7V;OtH	-30.8	54.0			62.8±2.6	-0.5		1.27			
	71843	72408	27.0	62.8	7.89	F0;OtH	-37.1	49.7	1.1 ±1.4	1.0 ±1.5	74.5±3.7	-9.5	8.8±1.5	1.29	3.9010	0.850	
658	72808		346.6	43.6	7.83 (252)	F6V;OtH	6.8	25.3			82.0±4.4	-5.0		1.09			
	72808	72606	346.4	44.3	8.19	F5;OtH	5.4	25.1	1.3 ±1.9	0.4 ±1.9	90.0±7.3	-25.6	20.7±1.1	1.31	1.0274	0.820	
659	73094		7.1	55.3	9.87 (462)	K0;UnK	-172.8	199.9			53.0±6.9			0.79			
	73094	73963	13.9	54.8	10.35	K0;UnK	-149.8	213.3	0.9 ±3.8	1.7 ±2.7	65.2±9.2			0.79	3.6454	0.760	
660	73316		8.0	54.9	8.49 (365)	F8;UnK	-61.3	35.5			62.7±5.0			1.09			
	73316	73641	7.1	53.2	9.38	G5;UnK	-57.7	41.2	-4.3 ±2.5	-7.7 ±2.6	78.4±24.4			0.88	1.8656	0.290	kn: 73642
661	73730		97.1	50.4	7.40 (191)	A2;OtH	7.7	9.1			99.9±3.4	-9.0		1.39			
	73730	72389	95.3	54.3	10.04	G5;UnK	6.1	9.2	0.9 ±2.6	1.4 ±2.7	92.3±8.8			0.87	6.9932	0.920	
	73730	73105	98.0	51.3	8.03	F8;BiN	12.3	5.8	-4.4 ±2.2	3.5 ±2.1	99.9±7.1	-4.9	-4.0±5.4	1.45	1.7506	0.980	
662	73893		330.3	17.8	9.42 (449)	G3V;UnK	-38.8	-27.1			89.5±11.6			0.96			
	73893	75490	332.7	14.5	9.97	G4V;UnK	-38.3	-28.9	-0.0 ±2.2	1.1 ±2.4	99.9±20.9			0.92	6.2810	0.160	
663	74129		1.1	48.4	7.51 (208)	F0;BiN	32.7	-48.4			88.7±6.4	12.4		1.39			
	74129	74951	6.8	48.2	8.69	F2;UnK	28.6	-54.8	-1.6 ±1.5	4.2 ±1.5	81.8±6.9			1.14	5.8760	0.120	
664	74278		78.1	56.3	9.85 (461)	K0;UnK	68.1	77.1			73.1±29.2			0.87			kn: 74281
	74278	74281	78.1	56.3	9.94	K0;UnK	63.0	76.1	5.1 ±2.8	1.0 ±2.8	78.1±25.8			0.84	0.0066	1.000	
665	74286		45.2	59.3	7.26 (177)	F6III;OtH	-25.0	-5.1			64.2±2.6	17.5		1.27			
	74286	73700	38.5	60.5	7.29	F8V;BiN	-24.0	-2.7	3.1 ±1.6	-5.9 ±1.7	65.8±2.4	-1.4	19.3±4.0	1.40	3.9837	0.120	
666	74343		116.5	34.6	8.97 (426)	G0;UnK	9.9	-14.7			98.9±6.4			1.16			
	74343	83332	115.0	30.4	9.43	F5;UnK	7.3	-11.0	2.6 ±1.7	-4.2 ±2.2	99.9±8.7			1.00	7.4707	0.650	
667	74438		319.5	-2.2	7.55 (213)	F5V;BiN	-25.2	-22.3			88.6±8.0	44.5		1.32			
	74438	75236	318.5	-5.9	8.42	G6V;OtH	-26.2	-15.0	2.9 ±1.7	-0.3 ±1.9	87.3±7.0	-18.5	63.7±0.5	1.05	6.0301	0.100	
668	74442		42.7	58.8	8.38 (343)	G0V;BiN	-131.9	-25.1			79.8±5.5	-60.7		1.05			kn: 74439

Table 5—Continued

Indx	Pri	Cmp	ℓ	b	V	Type	μ_l	μ_b	$\Delta\mu_\ell^{cor}$	$\Delta\mu_b^{cor}$	d	v_r	Δv_r^{cor}	$\mathcal{M}$	$\Delta\theta d_p$	Prob	Comment
			deg	deg	mag		…………	mas yr^{-1}	…………		pc	… km s^{-1} …		$M_\odot$	pc		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	74442	74439	42.7	58.8	9.35	G0;UnK	-129.5	-24.4	-2.5 ±1.6	-0.7 ±1.8	69.1±6.4			0.87	0.0125	1.000	
669	74662		33.0	57.1	8.48 (360)	G0V;BiN	25.5	117.8			69.5±5.4	-30.4		1.24			
	74662	74672	34.6	57.3	9.68	G5;UnK	35.1	108.9	-5.4 ±1.3	8.6 ±1.3	66.7±6.2			0.84	1.1031	0.230	
670	74670		13.3	52.1	7.11 (164)	F2IV;UnK	2.3	-55.8			66.8±3.3			1.46			
	74670	73271	8.5	55.2	7.81	F2;OtH	4.1	-53.4	-0.1 ±2.6	0.1 ±2.7	75.5±5.0	18.3		1.27	4.9540	0.190	
671	74876		326.8	8.1	6.98 (148)	F6V;OtH	10.6	10.1			88.5±6.0	41.6		1.49			
	74876	76854	329.6	5.2	10.22	G0;UnK	7.1	16.3	-1.2 ±2.0	-1.3 ±1.9	99.9±23.1			0.87	6.1331	0.270	
672	75035		337.4	22.7	9.15 (439)	G0V;UnK	-44.5	-8.0			81.6±8.3			0.96			
	75035	74651	335.9	22.5	9.21	F9V;UnK	-48.4	-14.0	3.4 ±2.3	5.5 ±2.2	82.7±11.1			1.03	1.9029	0.310	
673	75139		34.7	56.0	8.49 (366)	G0;OtH	15.1	-19.3			96.2±9.3	-8.3		1.26			
	75139	74120	35.4	59.0	9.10	G5;UnK	17.0	-15.9	-2.0 ±1.4	-2.6 ±1.4	97.0±10.4			0.91	5.0931	0.880	
674	75284		353.6	38.4	8.87 (416)	G0;UnK	-5.6	-11.9			63.9±6.6			1.02			
	75284	75475	353.0	37.2	9.63	G0;UnK	3.4	-17.0	-9.1 ±1.7	4.2 ±1.8	70.7±8.1			0.85	1.4726	0.370	
675	75734		41.1	55.1	8.66 (391)	G5;OtH	-66.2	34.3			97.1±13.5	8.0		1.08			
	75734	74159	43.0	59.6	9.76	F8;UnK	-61.3	36.4	-4.3 ±1.8	-1.7 ±1.9	96.5±12.1			0.95	7.7303	0.200	
676	76020		353.7	35.4	8.43 (351)	F8;OtH	-59.5	28.3			94.2±8.8	-2.5		1.07			
	76020	75684	349.4	33.0	8.81	F6V;UnK	-60.0	28.2	-0.9 ±1.7	-2.7 ±1.7	92.4±11.5			1.09	7.0342	0.740	
677	76046		2.3	41.6	8.41 (348)	G0;OtH	-73.6	41.6			72.3±5.6	-9.5		0.89			
	76046	75923	2.8	42.3	9.16	G2V;UnK	-68.0	35.6	-5.2 ±1.4	6.7 ±1.4	71.9±6.5			0.91	1.0404	0.990	
678	76133		3.5	41.9	5.50 (39)	K0III;OtH	-44.1	-13.5			85.9±3.0	-16.1		1.33			11 A01 Ser
	76133	77728	6.2	37.5	8.55	G2V;UnK	-43.9	-13.0	0.8 ±1.2	-2.2 ±1.2	86.8±7.8			1.03	7.3934	0.980	
679	76700		16.7	46.4	8.14 (303)	F5;UnK	-20.7	36.1			78.9±6.6			1.16			
	76700	76051	15.9	48.4	9.80	G;UnK	-23.5	31.8	2.1 ±2.5	5.2 ±2.7	81.1±73.6			0.87	2.7382	1.000	
680	76772		359.1	36.5	9.50 (453)	G0;UnK	23.3	-22.6			72.0±7.2			0.89			
	76772	77326	1.2	35.8	10.48	K3V;UnK	32.5	-30.1	-8.6 ±2.5	6.6 ±2.3	72.7±9.0			0.80	2.3206	0.790	
681	76797		337.7	15.8	7.58 (219)	A9V;UnK	-119.3	-11.4			90.3±5.4			1.57			
	76797	77443	338.2	13.9	9.96	G6V;UnK	-122.9	-10.7	3.8 ±1.9	-1.1 ±2.1	99.9±19.5			0.88	3.0587	0.190	
682	76875		338.2	16.0	8.37 (340)	F2V;UnK	-34.7	-7.5			90.6±9.2	-1.9		1.30			
	76875	77015	335.9	12.7	9.66	G3V;UnK	-36.3	-13.4	1.6 ±2.0	5.3 ±1.9	90.6±12.4	-0.7	-0.4±1.8	0.92	6.4572	1.000	
	76875	77331	340.6	17.1	10.32	-;UnK	-46.3	-9.4	11.7 ±2.2	2.4 ±2.2	85.3±40.6			0.86	4.0092	0.590	
683	76997		338.2	15.6	8.52 (370)	F5V;UnK	-50.6	-15.6			84.9±7.0			1.16			
	76997	77331	340.6	17.1	10.32	-;UnK	-46.3	-9.4	-3.6 ±2.6	-5.0 ±2.4	85.3±40.6			0.86	4.0848	0.330	
684	77051		335.9	12.5	9.14 (438)	G2/G3V;UnK	-37.4	-8.6			98.7±17.5			1.09			
	77051	77015	335.9	12.7	9.66	G3V;UnK	-36.3	-13.4	-1.1 ±2.7	4.9 ±2.6	90.6±12.4	-0.7		0.92	0.2895	1.000	
685	77252		58.3	52.0	7.56 (215)	F5;BiN	59.2	101.2			80.2±4.1	-39.6		1.32			kn: 77245
	77252	77245	58.3	52.0	8.77	-;BiN	60.8	102.1	-1.5 ±1.8	-0.9 ±1.6	73.7±6.1	-41.1	1.5±0.5	1.07	0.0119	1.000	

Table 5—Continued

Indx	Pri	Cmp	ℓ	b	V	Type	μ_l	μ_b	$\Delta\mu_\ell^{cor}$	$\Delta\mu_b^{cor}$	d	v_r	Δv_r^{cor}	$\mathcal{M}$	$\Delta\theta d_p$	Prob	Comment
			deg	deg	mag		.... mas yr^{-1}			....	pc	.... km s^{-1}		$M_\odot$	pc		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
686	77432		334.3	9.2	8.96 (425)	F5V;UnK	-34.9	-11.3			96.3±12.3	0.2		1.17			
	77432	77015	335.9	12.7	9.66	G3V;UnK	-36.3	-13.4	1.4 ±2.0	2.3 ±1.9	90.6±12.4	-0.7	0.2±1.8	0.92	6.3452	0.160	
	77432	77051	335.9	12.5	9.14	G2/G3V;UnK	-37.4	-8.6	2.5 ±2.4	-2.5 ±2.4	98.7±17.5			1.09	6.0865	0.220	
	77432	77520	336.9	12.1	9.25	F3V;OtH	-24.6	-7.9	-10.3 ±1.8	-3.0 ±1.8	99.9±14.8	1.9	-2.7±1.5	1.29	6.4699	0.150	
687	77960		348.6	22.8	8.40 (346)	A4IV/V;UnK	-31.3	-7.8			94.3±10.8	0.2		1.33			
	77960	78008	347.7	21.7	9.40	F7V;UnK	-33.5	-7.9	2.3 ±2.1	-0.1 ±2.1	83.2±10.7			0.93	2.1721	0.470	
688	78008		347.7	21.7	9.40 (447)	F7V;UnK	-33.5	-7.9			83.2±10.7			0.93			
	78008	76673	343.0	22.3	9.58	G8V;YnG	-34.6	-9.8	-0.6 ±3.1	1.1 ±2.4	95.8±20.6	-1.3		0.89	6.4460	0.660	
689	78058		342.7	16.5	6.29 (80)	F6V;OtH	38.8	-31.2			51.8±1.3	18.3		1.42			
	78058	79127	345.9	15.7	8.21	G1V;UnK	36.4	-33.7	-2.2 ±1.7	2.9 ±1.7	57.2±4.2			0.98	2.8460	0.220	
690	78159		43.7	48.8	4.14 (6)	K2III;BiN	-77.3	64.9			67.9±1.0	-32.4		0.64			13 ϵ CrB
	78159	77512	41.9	50.4	4.59	G3.5II;F/E	-79.0	63.2	-1.9 ±1.0	2.6 ±1.1	52.1±0.7	-19.4	-11.9±0.6	0.97	2.3263	0.120	10 δ CrB
691	78283		31.6	46.1	7.79 (247)	F8;OtH	-16.7	57.6			71.7±4.2	-62.0		1.07			
	78283	78067	34.2	47.4	8.45	G0;BiN	-8.2	56.4	-0.9 ±1.5	5.7 ±1.5	71.5±4.8	-30.7	-31.0±7.5	1.18	2.7346	1.000	
692	78301		331.4	2.8	8.90 (419)	F3V;UnK	-49.7	-11.4			86.4±11.2			0.95			
	78301	77190	331.4	6.5	10.06	G5IV;YnG	-48.2	-16.1	-1.5 ±1.8	5.7 ±2.4	87.9±13.2	4.2		0.85	5.4651	0.310	
693	78408		334.1	5.7	7.52 (211)	G5IV;OtH	-203.0	8.9			67.3±3.0	-23.6		0.99			
	78408	78521	335.0	6.3	9.20	G6V;BiN	-196.2	13.6	-5.7 ±1.5	-3.6 ±1.5	65.7±5.1	-1.5	-23.0±2.6	0.96	1.2336	0.820	
694	78581		344.6	16.3	9.07 (434)	G1V;VaR	-41.2	-11.3			91.5±9.6	2.0		0.97			
	78581	77331	340.6	17.1	10.32	-;UnK	-46.3	-9.4	5.7 ±2.4	-2.7 ±2.4	85.3±40.6			0.86	6.1044	0.130	
	78581	78711	341.6	12.9	9.30	G0V;UnK	-40.6	-15.1	-0.1 ±2.0	3.7 ±2.0	90.5±12.1			0.95	7.2160	0.200	
695	78822		4.8	32.4	7.86 (256)	F5;OtH	37.3	-38.0			77.2±5.5	-7.6		1.29			
	78822	77326	1.2	35.8	10.48	K3V;UnK	32.5	-30.1	5.0 ±2.3	-5.1 ±2.2	72.7±9.0			0.80	6.1089	0.200	
696	78849		4.9	32.4	6.35 (84)	F2IV;BiN	36.5	-35.2			87.3±8.5	-11.6		1.63			
	78849	78822	4.8	32.4	7.86	F5;OtH	37.3	-38.0	-0.9 ±2.0	2.8 ±2.0	77.2±5.5	-7.6	-4.0±1.5	1.29	0.1097	0.990	
697	79041		359.3	27.7	8.39 (344)	F3V;UnK	-71.4	51.6			91.3±9.0			1.22			
	79041	78899	359.7	28.6	8.80	F8;UnK	-63.9	57.5	-7.1 ±1.9	-5.2 ±2.0	94.4±11.8			1.01	1.5238	0.750	
698	79292		76.7	46.1	8.09 (296)	F5;OtH	86.5	38.6			78.4±3.7	-23.0		1.17			
	79292	79807	81.0	44.4	9.06	K0;UnK	93.3	30.3	-1.7 ±2.0	1.8 ±1.8	74.0±5.0			0.95	4.7308	0.190	
699	79645		5.5	29.9	7.93 (266)	F0;UnK	-49.8	16.6			92.9±6.8			1.29			
	79645	80291	5.5	27.3	8.38	G5;UnK	-54.7	17.5	4.8 ±1.8	-2.3 ±2.0	89.9±14.3			0.95	4.2157	0.260	
700	80543		31.9	39.1	6.70 (117)	G0III;OtH	-1.4	-2.1			79.6±3.5	-37.9		1.73			
	80543	79898	30.4	40.8	8.71	G0;UnK	4.4	-1.3	-7.9 ±1.6	2.1 ±1.6	89.3±8.6			1.16	2.7961	0.130	
701	80647		325.1	-9.5	8.03 (282)	F3V;UnK	-36.8	1.2			97.7±7.0			1.34			
	80647	78629	321.0	-9.8	9.16	F0V;UnK	-36.8	3.6	-0.5 ±2.6	-2.0 ±2.1	99.9±14.2			1.16	6.9563	0.230	
702	80770		346.7	10.4	7.51 (209)	F5V;BiN	1.0	56.0			90.7±9.3	51.8		1.42			

Table 5—Continued

Indx	Pri	Cmp	ℓ	b	V	Type	μ_l	μ_b	$\Delta\mu_\ell^{cor}$	$\Delta\mu_b^{cor}$	d	v_r	Δv_r^{cor}	$\mathcal{M}$	$\Delta\theta d_p$	Prob	Comment
			deg	deg	mag		............mas yr^{-1}			....	pc	....km s^{-1}....		$M_\odot$	pc		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	80770	80556	347.9	12.3	9.27	G5V;UnK	-12.8	51.1	11.6 ±2.0	1.0 ±2.0	98.9±13.7			0.92	3.4218	0.280	
703	80814		31.3	38.0	7.47 (204)	A3;OtH	14.0	-6.7			89.5±5.4	-6.7		1.48			
	80814	79898	30.4	40.8	8.71	G0;UnK	4.4	-1.3	9.4 ±1.6	-4.5 ±1.7	89.3±8.6			1.16	4.4487	0.590	
704	80886		42.2	40.8	8.59 (381)	F8;OtH	22.5	40.1			80.3±5.9	-19.8		1.06			
	80886	81875	42.3	37.8	8.84	F8;UnK	21.3	37.8	1.3 ±1.5	-0.5 ±1.6	81.3±6.5			1.08	4.1495	1.000	
705	80926		23.8	34.8	6.97 (146)	G5;BiN	80.1	0.4			77.8±4.1	4.0		1.17			kn: 80933
	80926	80933	23.8	34.8	8.26	G5;BiN	84.1	-0.9	-4.0 ±2.4	1.3 ±2.4	70.5±4.5	6.4	-2.4±4.7	1.20	0.0224	1.000	
706	81339		3.5	21.8	7.70 (237)	F5V;OtH	-46.1	39.7			80.9±3.4	-11.1		1.30			
	81339	81330	3.0	21.5	9.00	G3V;UnK	-43.8	35.5	-2.6 ±1.7	4.0 ±1.7	73.3±7.2			0.88	0.7267	0.210	
707	81641		20.8	30.9	5.77 (54)	A1V;BiN	-8.7	-4.7			90.0±3.0	-28.0		2.83			37 Her; kn: 81634
	81641	81634	20.8	30.9	6.92	A3IV;BiN	-8.8	-5.2	0.0 ±1.2	0.5 ±1.2	93.1±4.4	-28.0	0.0±5.6	1.38	0.0304	1.000	36 Her
708	81696		336.7	-1.6	6.87 (132)	O6.5V;BiN	2.0	13.9			55.7±51.8	-35.5		1.23			
	81696	79996	335.4	2.1	9.99	-;UnK	-7.3	20.8	6.2 ±23.5	1.7 ±24.7	67.8±54.4			0.84	3.8060	0.630	
709	82102		1.9	17.8	8.93 (422)	F8V;UnK	-32.1	9.4			93.5±24.3			1.03			
	82102	82439	358.5	14.0	9.45	F6/F7V;UnK	-30.4	10.3	-3.3 ±3.2	-3.2 ±3.3	99.2±19.0			0.97	8.1226	0.420	
710	82562		336.1	-4.5	8.93 (423)	G5V;BiN	-205.4	15.6			84.3±9.0	-62.4		0.92			
	82562	83226	336.8	-5.5	10.05	G5;UnK	-212.9	6.7	9.3 ±2.5	5.8 ±2.6	86.4±17.2			0.84	1.8410	0.730	
711	82661		335.5	-5.2	9.36 (444)	G3V;UnK	-25.0	-44.3			79.7±7.1			0.93			
	82661	82897	336.9	-4.6	10.11	G5;UnK	-27.0	-49.2	2.5 ±2.5	5.0 ±2.5	87.6±13.1			0.85	2.1566	0.730	
712	83478		33.5	29.9	5.91 (61)	A1V;BiN	-40.5	5.6			76.7±2.1	-31.7		2.78			kn: 83504
	83478	83458	28.7	28.1	8.18	G0;BiN	-47.0	-1.3	0.1 ±2.1	2.4 ±2.1	81.6±6.3	-16.4	-14.2±2.8	1.21	6.1363	0.310	
713	84054		45.8	32.1	6.20 (74)	A8V;BiN	24.6	21.0			82.3±2.8	-2.2		1.87			63 Her
	84054	83951	45.0	32.2	7.89	F5;OtH	25.9	19.7	-1.5 ±1.4	1.5 ±1.5	98.9±7.0	-23.2	20.9±1.3	1.44	1.0568	0.210	
	84054	84070	45.9	32.1	6.94	F2V;OtH	23.4	21.2	1.2 ±1.4	-0.2 ±1.6	77.4±3.4	6.3	-8.5±4.1	1.50	0.0780	1.000	
714	84229		331.8	-11.3	6.82 (128)	F1V;SpB	-112.7	-11.5			59.6±2.7	-1.8		1.41			
	84229	84642	330.6	-12.9	9.51	G8V;YnG	-107.1	-3.9	-5.8 ±3.1	-7.3 ±3.3	58.9±4.7	1.7	-2.7±10.7	0.83	2.0544	0.300	
715	84515		24.8	22.6	8.27 (326)	F8;BiN	-9.9	62.6			82.1±6.6	-15.2		1.09			
	84515	85911	29.1	19.9	8.65	G0;UnK	-5.3	59.7	-0.1 ±1.7	1.2 ±1.7	69.2±5.5			0.97	6.8215	0.960	
716	84936		2.1	7.8	8.70 (397)	G1V;UnK	-26.2	-18.1			55.2±4.6			0.90			
	84936	85246	1.3	6.2	9.80	G;UnK	-23.0	-13.1	-3.8 ±2.7	-6.1 ±2.9	53.9±5.3			0.80	1.7235	0.890	
717	84975		27.0	22.1	6.67 (114)	G5;UnK	-48.3	-52.0			77.5±3.4			1.01			
	84975	86024	29.6	19.8	7.40	F8;BiN	-54.8	-45.9	7.1 ±2.3	-6.8 ±2.3	91.1±7.2	0.6		1.36	4.5035	0.690	kn: 86013
718	85105		8.2	11.2	6.65 (109)	F3IV/V;OtH	0.2	-22.0			79.8±3.7	-18.0		1.61			
	85105	83538	4.5	14.3	9.54	G1;UnK	-3.5	-19.1	0.9 ±1.8	-0.3 ±1.8	95.9±10.5			0.96	6.6426	0.350	
719	85238		58.7	31.9	9.65 (459)	G0;UnK	3.5	4.5			98.0±11.6			0.90			
	85238	83811	59.3	35.6	10.51	F8;UnK	3.4	5.2	0.4 ±2.8	1.0 ±3.3	98.0±26.3			0.82	6.4007	1.000	

Table 5—Continued

Indx	Pri	Cmp	ℓ	b	V	Type	μ_l	μ_b	$\Delta\mu_\ell^{cor}$	$\Delta\mu_b^{cor}$	d	v_r	Δv_r^{cor}	$\mathcal{M}$	$\Delta\theta d_p$	Prob	Comment
			deg	deg	mag		....	mas yr^{-1}	....		pc	....	km s^{-1}	$M_\odot$	pc		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
720	85378		54.7	30.7	8.48 (361)	G1V;BiN	-24.9	368.2			68.6±4.1	-73.7		0.84			kn: 85373
	85378	85373	54.6	30.7	9.67	G8V;BiN	-22.4	365.4	-2.7 ±2.2	2.8 ±2.3	71.2±5.7	-73.9	0.2±0.4	0.80	0.0226	1.000	
721	85524		356.0	1.8	7.60 (223)	F0V;UnK	-36.4	16.8			89.8±5.9			1.42			
	85524	86360	358.2	0.6	8.71	F9V;UnK	-37.6	16.6	2.2 ±2.1	-0.3 ±2.0	99.6±13.2			1.08	3.9283	0.180	
722	85633		345.9	-5.1	8.48 (362)	F5IV/V;UnK	3.7	-33.4			95.1±9.1			1.23			
	85633	86767	348.5	-6.5	9.70	F5;UnK	-0.2	-31.4	4.8 ±2.3	-2.4 ±1.9	99.9±16.1			1.00	4.7973	0.110	
723	85661		19.4	15.8	6.72 (118)	F0;BiN	-2.6	-4.0			89.2±3.8	-46.5		1.72			
	85661	86320	23.3	15.7	8.98	F5;UnK	7.1	-6.8	-2.6 ±1.4	2.5 ±1.4	97.2±11.5			1.06	5.8824	0.140	
724	85727		331.3	-14.4	3.60 (4)	B8Vn;BiN	-115.0	-1.5			60.7±1.3	10.0		3.56			Tseen Yin; δ Ara
	85727	84642	330.6	-12.9	9.51	G8V;YnG	-107.1	-3.9	-7.5 ±2.3	1.7 ±2.6	58.9±4.7	1.7	8.7±14.1	0.83	1.6892	0.170	
725	85781		54.2	29.5	6.91 (138)	K0;BiN	-122.1	-27.7			86.8±3.8	16.1		1.17			
	85781	86382	51.2	27.0	7.48	F5;SpB	-110.4	-26.6	-9.0 ±1.9	-2.2 ±1.9	94.9±5.5	13.0	5.9±5.0	1.44	5.5238	0.190	
726	85940		31.4	20.9	7.85 (254)	G0;OtH	-60.3	-8.6			84.1±5.2	-29.2		1.16			
	85940	85944	31.5	20.9	8.50	G;EcB	-59.6	-15.7	-0.6 ±2.3	7.1 ±2.3	93.1±8.5	-25.8	-3.4±0.6	1.06	0.0935	0.990	
727	86079		351.3	-2.9	7.90 (259)	F3V;OtH	-55.8	13.4			85.8±5.8	-20.1		1.33			
	86079	86294	350.4	-4.1	8.98	G6V;BiN	-56.1	21.4	-0.4 ±2.0	-9.0 ±2.0	89.4±10.2	21.3	-41.2±6.7	0.98	2.1328	0.130	
728	86632		339.0	-11.7	9.04 (432)	G0;BiN	-39.8	-3.1			80.2±11.1	-19.2		0.97			
	86632	86994	339.8	-12.1	9.18	F7V;UnK	-40.5	-0.4	1.4 ±3.0	-3.2 ±3.1	90.6±9.1			1.00	1.1941	0.210	
729	86919		0.5	0.3	7.99 (271)	F3V;UnK	-42.6	-26.1			74.6±4.9			1.22			
	86919	86672	359.8	0.7	9.02	G5V;EcB	-36.2	-19.5	-6.8 ±2.4	-6.5 ±2.2	78.0±8.6	-6.2		0.87	0.9952	0.950	
730	86940		33.6	18.6	8.16 (311)	F8;OtH	2.4	51.4			69.4±4.1	-27.2		1.09			
	86940	85911	29.1	19.9	8.65	G0;UnK	-5.3	59.7	0.3 ±2.1	-6.4 ±2.1	69.2±5.5			0.97	5.4123	0.830	
731	87092		343.0	-10.5	9.54 (455)	K2III;UnK	-199.5	-49.6			53.8±5.0			0.82			
	87092	85831	342.0	-8.1	11.15	K7;UnK	-197.2	-49.0	-2.9 ±2.9	0.9 ±3.3	62.3±11.1			0.65	2.4208	0.810	
	87092	89621	344.7	-15.1	11.28	K;UnK	-205.2	-53.3	6.8 ±3.6	0.2 ±4.7	63.5±15.9			0.56	4.5894	0.220	
732	87204		62.6	27.8	7.18 (170)	G0;SpB	-68.4	-80.2			51.6±1.3	-6.0		1.26			
	87204	87135	63.9	28.2	7.78	G0;OtH	-59.8	-74.2	-8.9 ±1.9	-5.1 ±1.8	51.8±1.3	12.4	-18.9±8.0	1.17	1.0635	0.820	
733	87273		4.6	1.6	7.02 (154)	K1III;UnK	-58.3	29.6			88.3±5.3			1.15			
	87273	88695	4.7	-2.6	8.86	G1V;UnK	-58.3	31.1	0.0 ±1.7	-3.5 ±2.5	89.8±10.1			1.11	6.5062	0.150	
734	87782		9.9	3.2	6.48 (95)	A1V;ClN	-10.7	-21.6			98.5±5.0	4.0		2.55			
	87782	88019	11.9	3.6	7.32	A8/A9V;UnK	-12.9	-23.4	1.8 ±1.3	1.8 ±1.3	91.3±4.9			1.63	3.5331	0.190	
735	88413		336.3	-16.5	8.77 (406)	F6V;OtH	-76.0	6.9			98.2±11.8	-2.0		1.04			
	88413	88162	334.8	-16.7	9.26	G0V;UnK	-79.9	9.8	3.8 ±2.1	-2.3 ±2.2	91.9±11.8			0.97	2.5300	0.700	
736	88440		4.6	-1.9	8.31 (332)	F3V;UnK	-55.9	-25.2			94.9±7.8			1.26			
	88440	89043	6.7	-2.5	9.87	G0;UnK	-55.9	-30.1	0.9 ±2.4	4.5 ±2.3	92.5±16.8			0.91	3.6096	0.460	
737	88782		346.3	-12.5	7.64 (226)	G5V;OtH	-109.9	-17.2			72.2±4.0	-83.3		1.20			

Table 5—Continued

Indx	Pri	Cmp	ℓ	b	V	Type	μ_l	μ_b	$\Delta\mu_\ell^{cor}$	$\Delta\mu_b^{cor}$	d	v_r	Δv_r^{cor}	$\mathcal{M}$	$\Delta\theta d_p$	Prob	Comment
			deg	deg	mag		…………	mas yr^{-1}	…………		pc	….km	s^{-1}….	$M_\odot$	pc		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	88782	87887	346.2	-10.6	8.53	F6V;UnK	-110.9	-9.5	0.5 ±1.4	0.5 ±1.5	72.3±6.2			1.09	2.4306	1.000	
738	88920		356.1	-7.9	8.47 (358)	G2V;BiN	-14.9	14.0			88.3±11.4	17.0		1.01			
	88920	88351	355.1	-7.0	8.94	G5V;UnK	-13.9	12.6	-0.3 ±1.9	0.7 ±1.9	94.2±12.3			0.95	2.1064	1.000	
739	89270		55.1	20.3	8.08 (292)	F8;BiN	104.6	41.8			82.4±6.6	-43.4		1.00			kn: 89275
	89270	89275	55.1	20.3	8.23	F8;BiN	101.6	45.1	2.9 ±1.9	-3.3 ±2.0	78.9±4.9	-43.3	-0.1±0.3	1.07	0.0221	1.000	
740	89373		350.3	-12.0	7.79 (248)	F2V;UnK	-48.0	-23.6			99.1±7.9			1.40			
	89373	89274	351.0	-11.4	8.05	F2/F3I;UnK	-49.7	-16.9	1.9 ±1.5	-6.7 ±1.6	99.9±8.5			1.37	1.5533	0.980	
741	89935		56.4	18.9	5.12 (24)	A7V;OtH	46.8	14.9			80.6±1.6	-29.6		1.83			107 t Her
	89935	89360	58.5	21.2	7.59	F2;OtH	52.9	13.0	-3.3 ±1.9	4.4 ±1.9	81.0±3.0	-32.2	3.5±2.1	1.37	4.3094	0.180	
742	90011		2.7	-7.5	9.55 (456)	G0;UnK	-12.8	15.4			92.1±14.9			0.93			
	90011	89535	1.6	-6.7	10.94	WC;UnK	-24.2	16.8	11.0 ±8.3	-1.0 ±10.8	86.1±65.4	-12.1		0.72	2.2446	0.530	
743	90026		339.1	-18.2	8.04 (285)	F9;EcB	26.9	-71.2			90.8±8.7	-5.2		1.29			kn: 90028
	90026	90028	339.1	-18.2	8.45	-;UnK	31.8	-71.6	-4.9 ±2.1	0.4 ±2.1	96.2±8.8			1.11	0.0137	1.000	
744	90124		357.4	-10.5	5.52 (43)	K0III:;UnK	8.7	-4.6			87.9±2.7	-6.2		1.59			
	90124	91054	359.7	-11.9	6.91	F0V;UnK	11.1	-4.3	-1.8 ±2.7	-0.5 ±2.8	83.8±7.2			1.68	4.0599	0.290	
745	91044		30.4	3.5	8.37 (341)	F8;OtH	-6.1	-15.6			82.6±6.6	-34.7		1.20			
	91044	90589	26.4	2.9	10.13	B3;UnK	-17.9	-18.1	5.7 ±1.8	1.5 ±1.7	83.1±14.3			0.82	5.7567	0.480	
746	91273		5.8	-9.7	6.78 (125)	K1V;OtH	-119.1	-62.5			69.0±2.8	24.7		1.10			
	91273	91386	2.0	-11.7	7.29	F2V;BiN	-113.3	-58.4	-1.3 ±1.7	0.2 ±1.6	67.9±3.4	5.5	22.3±2.5	1.25	5.0370	0.860	
747	91689		10.5	-8.6	6.22 (76)	A3m...;OtH	-12.3	-39.2			62.9±1.8	0.7		1.58			26 Sgr
	91689	92016	13.4	-8.1	6.35	F5/F6V;SpB	-14.3	-36.2	2.2 ±1.2	-3.1 ±1.2	61.1±1.8	-4.4	4.8±1.6	1.54	3.2292	0.100	
748	92040		111.6	26.9	6.40 (88)	A8V;BiN	64.3	-13.8			89.3±2.9	-4.8		1.92			
	92040	92208	111.9	26.9	8.46	G5;UnK	73.0	-15.2	-8.6 ±1.6	1.3 ±1.5	95.0±5.4			1.02	0.3631	0.530	
749	93029		81.7	20.1	7.90 (260)	F5;OtH	8.9	-42.8			82.4±3.4	2.5		1.27			
	93029	92467	79.3	20.5	8.75	F8;UnK	13.1	-41.9	-3.4 ±1.6	-0.8 ±1.5	85.7±4.5			1.12	3.1676	0.990	
750	93036		8.0	-13.6	8.91 (421)	G0V;OtH	-12.3	-23.2			91.2±10.0	-20.3		0.99			
	93036	92363	6.4	-12.4	9.19	G3V;UnK	-17.1	-15.0	3.3 ±3.2	-7.2 ±3.3	88.6±16.0			0.97	3.0872	0.160	
751	93455		339.5	-23.9	8.32 (333)	G3V;UnK	-159.7	0.4			90.3±8.0			1.08			
	93455	91873	340.5	-21.0	8.84	G5V;OtH	-159.1	-7.3	-0.4 ±6.0	7.1 ±6.2	85.4±9.8	-49.7		0.95	4.8275	0.110	
752	94423		39.8	-2.6	7.66 (230)	F5;BiN	-10.1	-15.2			62.0±2.7	-3.2		1.26			
	94423	94774	44.2	-1.4	8.73	A4II;UnK	-3.5	-8.8	-5.7 ±2.9	-6.1 ±2.9	66.8±30.8			0.97	4.8859	0.230	
753	95203		8.8	-19.1	7.09 (163)	G0IV;BiN	39.7	-117.2			51.0±2.2	35.9		1.14			
	95203	95164	8.7	-19.1	7.10	G0IV;OtH	35.1	-119.3	4.8 ±1.7	1.9 ±1.9	45.6±1.3	36.7	-0.8±0.6	1.25	0.1076	1.000	
754	95572		48.5	-1.7	5.76 (53)	F6III;OtH	57.3	15.1			56.0±1.3	-35.5		1.73			
	95572	95652	49.5	-1.4	10.40	-;UnK	58.2	18.0	1.4 ±1.9	-2.2 ±1.9	39.1±20.9			1.28	0.9717	0.390	
755	95718		325.9	-28.5	6.72 (119)	F7V;SpB	74.2	55.7			63.5±2.7	46.0		1.32			

Table 5—Continued

Indx	Pri	Cmp	ℓ	b	V	Type	μ_l	μ_b	$\Delta\mu_\ell^{cor}$	$\Delta\mu_b^{cor}$	d	v_r	Δv_r^{cor}	$\mathcal{M}$	$\Delta\theta d_p$	Prob	Comment
			deg	deg	mag		............mas yr^{-1}	....			pc	... km s^{-1} ...		$M_\odot$	pc		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	95718	95315	326.2	-28.1	7.85	F8V;BiN	75.6	54.6	-2.0 ±2.0	0.1 ±2.1	61.3±2.9	45.9	0.3±3.0	1.07	0.5091	1.000	
756	96979		46.3	-7.4	6.89 (136)	F5;BiN	58.7	5.2			66.4±3.5	-41.9		1.44			kn: 96976
	96979	96976	46.3	-7.4	8.70	F8;BiN	58.3	2.2	0.4 ±3.4	3.0 ±3.5	51.2±28.3	-41.6	-0.3±0.4	0.99	0.0087	1.000	
757	97016		31.3	-15.2	7.07 (162)	F5;BiN	-37.0	-46.3			72.2±3.3	6.2		1.36			kn: 97022
	97016	97022	31.3	-15.2	7.51	F8;BiN	-38.9	-45.2	2.0 ±1.7	-1.0 ±1.7	69.4±3.5	4.9	1.3±0.9	1.29	0.0338	1.000	
758	97543		65.4	1.7	8.07 (289)	F8V;BiN	50.2	-17.2			92.9±7.3	-26.9		1.36			
	97543	97012	63.4	2.2	8.53	F8V;OtH	47.5	-14.1	0.5 ±1.9	-2.6 ±2.0	98.2±9.4	-19.1	-8.6±2.5	1.15	3.2708	0.810	
759	97646		338.0	-30.5	5.41 (36)	A0IV;BiN	-11.0	-21.8			85.0±3.8	3.8		2.40			
	97646	97581	337.9	-30.5	7.04	A5IV/V;UnK	-14.1	-25.5	3.2 ±1.8	3.7 ±1.8	90.0±4.4			1.42	0.1676	0.950	
760	97690		322.2	-30.2	7.31 (179)	F6V;BiN	-57.4	-12.6			87.0±6.8	6.4		1.41			
	97690	100549	322.0	-32.6	8.20	G8III;UnK	-58.3	-12.2	1.0 ±1.7	0.5 ±1.8	85.5±5.8			0.96	3.6203	0.980	
761	98174		338.4	-31.4	5.24 (28)	B9.5IV;OtH	-13.8	-23.9			85.4±3.1	-2.0		2.75			
	98174	97581	337.9	-30.5	7.04	A5IV/V;UnK	-14.1	-25.5	0.2 ±1.7	1.7 ±1.8	90.0±4.4			1.42	1.4539	0.880	
	98174	97646	338.0	-30.5	5.41	A0IV;BiN	-11.0	-21.8	-3.0 ±1.6	-2.0 ±1.6	85.0±3.8	3.8	-5.9±3.0	2.40	1.2940	0.960	
762	98287		3.9	-28.5	6.95 (141)	F2V;UnK	-30.6	-74.6			72.8±3.0			1.46			
	98287	100417	5.2	-33.1	7.49	G0/G1V;SpB	-31.5	-74.0	2.0 ±1.8	-2.1 ±2.8	59.4±3.3	-28.7		1.28	5.9906	0.240	
763	98516		355.8	-30.5	7.66 (231)	F5V;BiN	-124.1	-62.2			73.2±4.7	-17.2		1.38			
	98516	97667	0.3	-27.8	8.56	G1/G2V;UnK	-122.7	-55.5	4.8 ±2.3	-8.7 ±2.2	74.8±6.3			0.99	6.0810	0.460	
764	98842		9.3	-28.5	4.99 (23)	K1III;BiN	0.8	-44.7			89.1±2.0	-11.8		0.81			
	98842	98152	10.4	-26.6	6.55	A4IV/V;UnK	4.6	-43.5	-3.0 ±1.4	-0.2 ±1.4	85.9±5.5			1.50	3.4007	0.650	
765	98927		350.6	-31.9	9.92 (463)	K0/K1V;UnK	-94.4	-82.0			62.4±8.1			0.80			
	98927	97093	350.0	-28.4	9.95	K1V:;BiN	-87.2	-72.5	-7.7 ±2.8	-8.1 ±3.6	66.3±7.7	-33.9		0.75	3.8315	0.100	
766	99318		310.7	-29.3	8.15 (307)	F5V;BiN	-80.5	-23.2			95.8±4.8	-21.8		1.18			
	99318	96923	310.0	-28.3	9.32	G3V;UnK	-86.5	-21.5	5.3 ±1.9	-0.4 ±1.8	97.0±8.7			0.98	1.9582	0.900	
767	99679		63.9	-5.6	6.58 (102)	A1m;BiN	58.6	-22.6			91.5±5.4	-37.0		1.84			
	99679	98154	61.4	-2.6	6.79	F0;UnK	54.1	-15.5	0.7 ±1.4	-2.7 ±1.4	91.0±3.6			1.76	6.1872	0.340	
768	99689		57.0	-10.0	7.65 (227)	F8;BiN	-0.7	2.8			67.1±4.8	-4.4		1.09			
	99689	100451	58.3	-11.6	9.20	A5;UnK	3.3	1.0	-3.7 ±1.8	1.4 ±1.9	69.4±16.0			0.79	2.3952	0.980	
769	99695		351.9	-33.2	9.50 (454)	K0V;OtH	51.0	12.0			50.3±3.7	10.4		0.80			
	99695	100818	355.6	-35.2	11.58	-;UnK	49.4	7.5	-1.2 ±3.2	7.8 ±4.8	50.6±9.0			0.62	3.1645	0.620	
770	99729		48.7	-15.1	7.71 (240)	G4IV;BiN	-120.4	84.8			61.1±4.6	-1.2		1.01			kn: 99727
	99729	99727	48.7	-15.1	8.01	G4V;BiN	-120.7	82.1	0.3 ±2.2	2.7 ±2.2	61.4±5.2	-2.5	1.3±2.2	1.00	0.0128	1.000	
771	99753		37.0	-21.2	7.43 (195)	F0;UnK	16.0	-32.8			88.6±18.0			1.45			
	99753	100783	40.6	-22.8	7.48	F5;OtH	14.8	-32.3	2.9 ±2.1	-0.6 ±1.7	98.3±5.4	-51.4		1.41	5.6070	0.280	
772	99832		98.0	15.8	8.44 (355)	G5;UnK	287.8	-40.7			69.0±2.3			0.92			
	99832	98613	96.6	16.8	10.03	K2;UnK	289.0	-35.9	-1.4 ±3.3	-2.5 ±3.3	65.7±4.4			0.81	1.9650	0.970	

Table 5—Continued

Indx	Pri	Cmp	ℓ	b	V	Type	μ_l	μ_b	$\Delta\mu_\ell^{cor}$	$\Delta\mu_b^{cor}$	d	v_r	Δv_r^{cor}	$\mathcal{M}$	$\Delta\theta d_p$	Prob	Comment
			deg	deg	mag		mas yr^{-1}				pc	km s^{-1}		$M_\odot$	pc		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
773	100202		31.0	-25.2	7.79 (249)	F0V;OtH	13.9	-38.7			97.6±7.2	-12.2		1.37			
	100202	100800	30.7	-27.2	7.85	F2/F3V;BiN	18.2	-48.8	-4.6 ±1.8	9.2 ±1.8	93.6±7.3	-26.1	14.5±7.0	1.49	3.3627	0.100	
774	100597		329.5	-33.9	7.99 (272)	G0V;OtH	1.4	67.5			85.4±6.1	16.9		1.13			
	100597	104065	328.2	-37.9	9.12	G2V;UnK	3.8	62.6	-0.7 ±2.0	7.5 ±2.0	82.9±8.9			0.95	6.1705	0.110	
775	100737		79.9	2.3	7.11 (165)	A2;UnK	-0.7	-3.5			97.2±4.0			1.57			
	100737	100289	78.9	2.8	10.63	B3;UnK	-7.4	-2.9	6.4 ±1.7	-0.5 ±1.6	79.5±18.0			0.79	1.8267	0.130	
776	100941		358.2	-35.2	8.18 (314)	F5/F6V;BiN	-111.8	-108.4			98.6±8.5	-51.1		1.21			kn: 100937
	100941	100937	358.2	-35.2	8.69	F5/F6V;UnK	-110.3	-108.1	-1.6 ±1.6	-0.3 ±1.6	87.0±9.8			1.12	0.0169	1.000	
777	101082		114.1	23.2	5.96 (63)	K0III+;BiN	226.2	44.9			63.7±0.9	-14.6		1.44			74 Dra; kn: 101166
	101082	101166	114.2	23.2	8.68	G5;UnK	226.0	44.8	0.3 ±1.6	0.1 ±1.6	68.9±2.4			0.98	0.0662	1.000	
778	101483		57.0	-15.8	5.39 (34)	A3IVs;BiN	62.6	-43.6			72.4±6.1	-25.0		1.56			3 η Del
	101483	100269	57.3	-11.6	6.77	F8V;OtH	64.6	-39.2	-1.6 ±1.6	1.1 ±1.8	82.0±2.9	-25.4	-0.5±2.5	1.71	5.2617	0.160	
779	101716		68.7	-8.7	5.59 (44)	B9V;OtH	1.0	-20.1			97.4±2.7	-21.8		3.02			27 Vul
	101716	100171	66.1	-5.6	7.92	F8;OtH	-0.4	-18.8	-0.9 ±1.6	1.3 ±1.6	99.1±6.7	-27.6	5.3±2.5	1.30	6.8694	0.270	
780	101719		96.9	12.1	7.03 (160)	F2;OtH	-21.8	-43.2			59.1±1.3	8.0		1.35			
	101719	102727	97.6	10.9	7.92	F8;OtH	-20.9	-41.8	-1.4 ±2.1	-0.7 ±2.1	66.6±2.0	-10.6	18.8±4.0	1.18	1.4885	0.910	
781	102021		10.6	-36.1	8.48 (363)	G2V;BiN	30.7	30.5			97.0±9.7	-17.2		1.13			
	102021	101693	11.1	-35.2	8.97	F5V;OtH	30.1	35.9	0.7 ±2.0	-4.7 ±2.0	95.2±9.6	8.4	-25.3±0.8	1.02	1.7070	0.900	
782	102725		325.8	-35.7	7.00 (152)	F2III;UnK	-72.2	-21.9			78.0±3.2			1.66			
	102725	103917	324.8	-36.8	8.31	F6V;UnK	-72.0	-21.0	-0.4 ±1.8	-0.1 ±1.9	83.5±5.8			1.17	1.8275	1.000	
783	102962		333.3	-37.6	5.67 (49)	A2;BiN	-56.8	-43.3			76.3±3.7	-10.0		2.32			
	102962	104445	335.0	-40.2	8.93	G0V;UnK	-53.8	-49.3	-1.6 ±6.1	3.8 ±6.5	79.1±6.8			0.99	3.8018	0.130	
784	103107		349.8	-39.8	8.76 (403)	F6V;UnK	-32.0	-44.7			71.7±6.3			1.06			
	103107	103139	349.7	-39.9	9.55	G4V;UnK	-29.5	-41.0	-2.6 ±1.7	-3.6 ±1.8	66.6±7.0			0.87	0.1209	1.000	
785	103166		28.0	-35.3	7.46 (202)	G0V;BiN	-39.1	-4.4			69.5±2.7	-13.2		1.19			
	103166	102587	27.8	-33.7	8.14	F7/F8V;BiN	-34.1	-9.0	-5.1 ±1.6	5.8 ±1.6	70.5±3.9	-12.7	-0.5±0.3	1.07	1.9814	0.160	
786	103587		314.9	-32.9	9.02 (428)	G0V;YnG	-59.1	-10.6			99.8±7.9	-11.2		1.02			
	103587	108799	313.5	-36.1	10.00	-;UnK	-63.7	-10.7	4.0 ±2.6	-0.4 ±2.8	99.9±66.9			0.92	6.0085	0.950	
787	103754		113.3	21.1	8.65 (387)	G0;OtH	219.6	15.5			50.9±1.3	-2.0		0.85			
	103754	106882	115.5	20.7	8.91	K0;UnK	217.1	12.0	2.9 ±1.6	0.3 ±1.6	42.1±1.2			0.82	1.8951	0.750	
788	103814		358.2	-41.5	6.64 (108)	G3IV+.;BiN	-110.2	-70.6			82.2±7.0	-35.1		1.57			kn: 103819
	103814	103819	358.2	-41.5	6.90	K0III/;BiN	-111.6	-75.3	1.4 ±1.4	4.7 ±1.6	82.2±4.3	-32.6	-2.5±1.3	0.99	0.0230	1.000	
789	103833		73.3	-12.3	7.33 (180)	G0V+..;EcB	60.9	-62.9			52.0±1.6	-24.8		1.02			
	103833	102815	69.9	-11.4	7.67	G0V;BiN	50.7	-61.7	3.3 ±4.6	-0.3 ±2.3	51.2±1.9	-18.7	-7.2±17.4	1.07	3.1603	0.680	
790	103963		84.1	-3.5	6.34 (81)	F3IV;BiN	-42.3	-33.2			96.3±3.2	-22.4		2.08			
	103963	104614	84.8	-4.8	8.02	F8;UnK	-42.1	-30.9	0.4 ±2.0	-3.5 ±2.0	99.9±9.5			1.31	2.4958	0.240	

Table 5—Continued

Indx	Pri	Cmp	ℓ	b	V	Type	μ_l	μ_b	$\Delta\mu_\ell^{cor}$	$\Delta\mu_b^{cor}$	d	v_r	Δv_r^{cor}	$\mathcal{M}$	$\Delta\theta d_p$	Prob	Comment
			deg	deg	mag		....	mas yr^{-1}	....		pc	.... km s^{-1}	....	$M_\odot$	pc		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
791	104396		88.9	-0.3	6.97 (147)	F2;BiN	16.2	-16.5			68.5±2.0	-5.8		1.43			
	104396	104468	88.1	-1.2	7.60	G0;OtH	24.7	-14.2	-8.7 ±1.7	-2.5 ±1.7	68.3±2.4	5.0	-10.8±2.3	1.22	1.3387	0.430	
792	104481		53.3	-28.8	6.44 (92)	F5IV;BiN	39.7	-21.1			75.2±11.9	-39.9		1.86			
	104481	105819	53.5	-33.4	6.45	A1IV;OtH	38.6	-33.4	1.5 ±1.6	3.5 ±2.4	74.2±3.3	-9.0	-30.1±5.0	1.30	6.0986	0.200	
793	104536		70.3	-17.1	7.70 (238)	A0;BiN	6.9	-25.7			94.1±89.9	-21.2		1.20			
	104536	102981	67.0	-14.1	8.21	G0;OtH	2.7	-24.4	1.1 ±3.0	1.1 ±2.9	99.5±6.9	-11.8	-10.1±3.9	1.34	7.1679	0.980	
794	104721		346.6	-42.6	7.41 (193)	F5V;OtH	-25.7	-33.0			51.4±2.1	-2.7		1.22			
	104721	103139	349.7	-39.9	9.55	G4V;UnK	-29.5	-41.0	5.6 ±1.7	7.8 ±1.7	66.6±7.0			0.87	3.2716	0.240	
795	105109		352.5	-44.0	8.61 (386)	F6V;UnK	-103.4	2.8			97.2±9.1			1.15			
	105109	104892	348.6	-43.2	9.36	G6V;UnK	-103.2	2.7	0.0 ±2.0	5.0 ±1.8	99.6±13.7			0.96	5.0197	0.810	
796	105372		101.1	9.0	8.15 (308)	F5IV;OtH	15.5	-13.7			85.4±4.5	-16.5		1.23			
	105372	106524	99.9	5.3	9.13	F8;UnK	20.6	-12.9	-5.9 ±2.9	-3.3 ±3.0	75.6±26.1			0.98	5.6911	0.160	
797	106442		316.6	-35.9	8.32 (334)	G2V;OtH	-67.5	-13.1			66.1±3.1	15.4		1.05			
	106442	107847	315.0	-36.3	9.19	G9V+..;UnK	-65.6	-22.9	-0.9 ±2.1	11.3 ±2.1	70.2±5.9			0.90	1.5356	0.140	
798	106714		8.4	-48.1	7.36 (185)	F3V;BiN	-7.7	-90.4			62.4±3.4	-16.9		1.28			
	106714	106705	8.4	-48.0	8.67	G5V;UnK	-5.8	-90.6	-1.9 ±1.7	0.2 ±1.6	70.7±5.8			0.92	0.0238	1.000	
799	107067		8.8	-48.9	8.58 (379)	F2V;UnK	25.1	14.2			99.3±8.2			1.26			
	107067	105392	6.5	-44.9	9.84	G3V;UnK	18.9	16.7	6.5 ±2.1	-3.1 ±2.5	99.4±21.8			0.86	7.4730	0.340	
	107067	108335	12.1	-52.1	10.04	G3V;UnK	22.6	14.2	1.9 ±2.3	0.9 ±2.4	99.9±28.9			0.93	6.5957	0.490	
800	108232		321.0	-40.3	6.63 (105)	A8/A9V;BiN	-59.0	-14.6			93.4±4.7	-12.1		1.90			
	108232	106750	324.2	-40.0	9.14	G6:V:+;UnK	-51.5	-15.0	-5.7 ±2.6	-1.5 ±2.7	95.2±21.5			1.08	4.0477	0.780	
	108232	108220	321.0	-40.3	6.65	A1/A2V;UnK	-54.7	-15.6	-4.3 ±1.7	1.1 ±1.7	99.9±4.3			2.58	0.0782	0.810	
801	108475		354.2	-51.4	8.28 (327)	F5V;UnK	-6.5	-16.9			92.4±6.5			1.32			
	108475	108734	358.3	-52.5	9.16	G0V;UnK	-7.1	-16.6	1.5 ±1.9	-0.7 ±1.8	99.9±13.7			1.10	4.4238	0.410	
802	109306		13.1	-54.5	6.37 (86)	A2III/;OtH	24.9	-12.6			78.0±3.1	-3.6		1.46			
	109306	110419	10.6	-57.3	7.43	F4V;BiN	25.0	-12.2	-0.8 ±1.8	-1.8 ±1.6	86.2±7.7	-15.0	11.4±2.9	1.38	4.1995	0.420	
	109306	110433	10.6	-57.3	7.45	F2/F3I;UnK	24.7	-14.0	-0.5 ±1.8	0.1 ±1.6	74.0±4.2			1.45	4.2106	0.990	
803	109976		326.8	-46.0	7.33 (181)	F5/F6V;BiN	-69.0	-8.5			84.0±4.0	-2.4		1.43			
	109976	113019	322.2	-48.7	7.60	F9V;SpB	-69.8	-7.8	0.2 ±2.1	3.1 ±2.0	78.1±3.4	13.5	-14.3±6.6	1.19	6.0346	0.170	
804	110119		106.7	5.3	8.57 (377)	B8;BiN	6.2	-1.8			90.5±59.0	-23.0		1.12			
	110119	109278	104.4	4.1	9.53	B8;UnK	-6.9	-0.6	11.0 ±3.5	-2.4 ±3.2	98.0±34.4			1.06	4.1193	0.360	
805	110419		10.6	-57.3	7.43 (196)	F4V;BiN	25.0	-12.2			86.2±7.7	-15.0		1.38			
	110419	110433	10.6	-57.3	7.45	F2/F3I;UnK	24.7	-14.0	0.3 ±1.7	1.9 ±1.6	74.0±4.2			1.45	0.0592	1.000	
806	110486		90.6	-19.8	7.60 (224)	F8;BiN	7.2	-32.4			91.5±7.0	-7.1		1.56			
	110486	111203	92.9	-19.9	7.99	F5;OtH	12.2	-31.7	-4.0 ±2.4	-0.7 ±2.5	99.9±6.6	-8.4	1.5±3.3	1.38	3.4002	0.430	
807	110577		25.7	-57.2	8.00 (276)	F2V;UnK	-6.3	-63.3			88.7±6.1			1.32			

Table 5—Continued

Indx	Pri	Cmp	ℓ	b	V	Type	μ_l	μ_b	$\Delta\mu_\ell^{cor}$	$\Delta\mu_b^{cor}$	d	v_r	Δv_r^{cor}	$\mathcal{M}$	$\Delta\theta d_p$	Prob	Comment
			deg	deg	mag		............mas yr^{-1}	....			pc	... km s^{-1} ...		$M_\odot$	pc		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	110577	110491	23.5	-57.1	8.65	F2V;UnK	-10.6	-55.7	2.2 ±2.0	-7.3 ±1.9	89.5±8.0			1.22	1.8733	0.590	
808	110863		115.9	17.7	8.14 (304)	F5;OtH	112.7	-16.6			99.1±6.2	-3.2		1.31			
	110863	107328	113.1	17.9	10.34	K0;UnK	111.6	-16.2	0.8 ±2.1	1.4 ±2.1	92.2±8.4			0.86	4.7355	0.850	
809	111515		31.1	-59.3	5.97 (64)	K1III;OtH	-0.5	-25.1			92.9±3.7	-3.0		1.61			
	111515	111596	35.7	-58.9	9.10	F5V;UnK	2.1	-31.9	-0.5 ±1.8	6.9 ±1.8	94.5±8.8			1.11	3.9178	0.320	
810	111570		113.3	12.6	7.58 (220)	F5;SpB	103.5	-6.5			84.5±3.8	-4.9		1.40			kn: 111575
	111570	111575	113.3	12.6	8.41	F5;BiN	104.2	-4.8	-0.7 ±1.8	-1.8 ±1.8	85.3±5.7	-4.5	-0.4±5.8	1.17	0.0172	1.000	
811	111643		358.3	-59.3	5.85 (56)	A1V;BiN	-77.2	-27.4			65.8±2.3	15.0		2.53			σ^{02} Gru
	111643	111594	358.3	-59.2	6.28	A3Vn;BiN	-80.5	-26.1	3.4 ±2.2	-1.4 ±2.2	68.3±2.0	6.9	8.1±3.6	1.39	0.1078	1.000	σ^{01} Gru
812	111866		96.5	-17.3	6.96 (144)	F0;UnK	-17.2	-2.0			85.4±3.7	0.0		1.73			
	111866	112364	97.8	-17.6	8.56	G0;UnK	-25.1	-1.8	7.9 ±2.1	-0.3 ±2.2	80.9±6.9			1.04	1.8146	0.130	
813	112051		91.7	-25.6	4.80 (15)	A1IV;BiN	-17.3	-18.1			91.6±5.6	9.1		2.87			43 o Peg
	112051	112548	93.4	-25.6	7.25	A5;UnK	-23.9	-19.0	6.3 ±1.7	0.7 ±1.6	91.2±5.3			1.56	2.4552	0.160	
814	112330		348.1	-58.9	8.80 (411)	F6V;UnK	-26.6	-47.1			98.5±10.4			1.07			
	112330	112337	348.2	-58.9	8.92	F6/F7V;UnK	-24.3	-45.2	-2.2 ±1.5	-1.9 ±1.5	96.9±9.8			1.05	0.0699	1.000	
815	112537		34.1	-61.8	8.81 (412)	F7V;UnK	-1.7	-32.3			94.2±12.4			1.25			
	112537	111596	35.7	-58.9	9.10	F5V;UnK	2.1	-31.9	-3.0 ±2.1	-0.5 ±2.4	94.5±8.8			1.11	4.9607	0.990	
816	112663		349.3	-59.9	8.52 (371)	G3V;OtH	-125.7	19.3			70.2±4.9	37.8		0.97			
	112663	111709	355.9	-59.1	9.65	G9V;UnK	-124.8	4.8	-8.6 ±2.3	-0.0 ±2.4	66.5±6.0			0.85	4.2566	0.290	
817	112746		13.3	-63.2	6.34 (82)	F0V+..;BiN	-24.2	35.1			68.9±3.2	24.0		1.68			
	112746	113213	15.5	-64.4	9.68	K3V;UnK	-22.9	33.2	-3.7 ±3.1	2.5 ±3.2	73.2±16.5			0.85	1.8996	0.880	
818	112930		343.6	-59.1	7.36 (186)	F3V;OtH	-13.5	-11.8			93.4±5.4	43.9		1.41			
	112930	113906	345.3	-61.9	9.36	G3V;UnK	-12.0	-6.6	-2.7 ±1.6	-0.5 ±1.7	94.9±12.5			0.96	4.8525	0.580	
819	112970		112.1	7.6	6.98 (149)	F2;BiN	98.3	15.8			59.0±1.5	0.5		1.33			kn: 112946
	112970	112946	112.1	7.7	7.53	F5;BiN	97.4	15.2	0.9 ±1.5	0.6 ±1.5	59.9±1.4	1.2	-0.7±0.6	1.16	0.0197	1.000	
820	113054		2.6	-63.2	9.12 (436)	G4V;UnK	-47.8	-48.2			97.0±10.4			0.95			
	113054	113912	1.4	-65.2	10.81	G5;UnK	-40.8	-49.7	-7.8 ±2.0	2.5 ±2.1	99.0±20.7			0.87	3.4794	0.700	
821	113336		92.1	-31.7	8.75 (402)	G5;BiN	-4.9	-46.7			84.9±9.3	12.9		1.26			
	113336	113055	92.3	-29.8	10.38	G0;UnK	-4.3	-43.3	-0.6 ±1.9	-4.4 ±1.9	95.7±15.6			0.84	2.7711	0.880	
822	113381		12.1	-64.8	7.91 (262)	F3V;UnK	5.5	7.4			81.2±4.2			1.26			kn: 113374
	113381	113374	12.1	-64.8	9.65	G6V;BiN	7.6	3.5	-2.2 ±1.9	4.0 ±1.8	74.2±9.1	7.5		0.92	0.0234	1.000	
823	113532		20.9	-65.3	5.51 (42)	F0V;VaR	4.2	7.9			95.8±2.2	0.0		1.68			
	113532	113381	12.1	-64.8	7.91	F3V;UnK	5.5	7.4	-0.2 ±1.7	-0.2 ±1.6	81.2±4.2			1.26	6.2769	1.000	kn: 113374
824	114355		72.1	-56.4	8.47 (359)	F0;UnK	-15.0	9.1			94.7±14.1			1.29			
	114355	115195	74.1	-59.1	11.86	DA:;UnK	-11.0	2.7	-4.3 ±2.5	6.1 ±2.7	99.9±36.1			53.59	4.7082	0.280	
825	114710		331.6	-58.7	9.43 (450)	F5V;UnK	20.9	5.2			95.4±12.6			0.97			

Table 5—Continued

Indx	Pri	Cmp	ℓ	b	V	Type	μ_l	μ_b	$\Delta\mu_\ell^{cor}$	$\Delta\mu_b^{cor}$	d	v_r	Δv_r^{cor}	$\mathcal{M}$	$\Delta\theta d_p$	Prob	Comment
			deg	deg	mag		.... mas yr^{-1}	....			pc	.... km s^{-1}		$M_\odot$	pc		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
	114710	116553	322.6	-58.1	9.54	F7V;UnK	21.2	3.7	0.6 ±2.7	-1.4 ±2.0	82.6±9.9			0.86	7.9639	0.800	
826	115309		72.0	-60.6	7.87 (257)	F0;OtH	-15.7	6.9			82.8±4.5	-8.4		1.27			
	115309	114355	72.1	-56.4	8.47	F0;UnK	-15.0	9.1	-0.8 ±1.1	-0.6 ±1.1	94.7±14.1			1.29	6.0863	0.330	
827	115895		323.6	-56.8	8.46 (357)	F8V;OtH	18.9	7.2			75.0±4.2	7.0		1.01			
	115895	116553	322.6	-58.1	9.54	F7V;UnK	21.2	3.7	-2.0 ±2.1	3.6 ±2.1	82.6±9.9			0.86	1.8339	0.360	
828	116139		111.3	-7.0	8.77 (407)	G5;UnK	7.4	-3.1			61.7±4.7			0.87			
	116139	116615	111.8	-8.5	9.87	B8;UnK	-3.6	-2.7	11.0 ±2.9	-0.4 ±3.2	52.5±36.1			1.77	1.6211	0.280	
829	116217		45.6	-71.3	8.06 (286)	G9IV;UnK	2.4	-22.2			95.3±6.8			1.02			
	116217	115924	43.4	-70.7	8.08	F2/F3V;BiN	5.0	-25.1	-3.4 ±2.0	2.8 ±2.1	88.4±7.5	28.8		1.26	1.5948	0.170	
830	116263		322.4	-57.0	8.14 (305)	F6/F7V;BiN	-27.4	-42.1			85.1±8.9	-31.9		1.08			
	116263	114333	324.9	-53.6	8.69	G3V;OtH	-23.4	-43.5	-0.7 ±5.1	5.3 ±4.9	85.0±7.7	19.4	-52.5±0.5	0.98	5.5707	0.150	
831	116360		106.6	-22.6	7.22 (173)	F8;SpB	139.4	53.5			53.1±1.4	26.2		1.04			
	116360	117403	108.2	-27.2	9.14	G0;UnK	143.1	67.8	-7.0 ±2.4	-4.4 ±2.4	53.8±4.4			0.85	4.4678	0.160	
832	116370		343.0	-68.0	6.65 (110)	A5V;UnK	-27.8	-34.5			71.4±2.7	17.4		1.36			
	116370	117471	339.7	-70.5	8.95	G1/G2V;UnK	-32.4	-33.0	3.8 ±1.5	2.3 ±1.5	74.4±10.1			1.02	3.4458	0.370	
833	116387		322.3	-57.3	6.73 (120)	F2IV;UnK	26.5	33.9			95.8±4.9			1.72			
	116387	116056	321.9	-56.0	8.73	F9V;BiN	33.5	28.3	-6.8 ±2.6	5.3 ±2.6	93.0±11.2	8.1		1.03	2.3399	0.970	
834	116389		343.1	-68.1	4.69 (11)	A2Vp..;RoT	-23.3	-36.8			76.3±3.1	19.4		2.42			ι Phe
	116389	116370	343.0	-68.0	6.65	A5V;UnK	-27.8	-34.5	4.5 ±1.2	-2.4 ±1.2	71.4±2.7	17.4	2.0±1.4	1.36	0.1087	0.970	
835	116559		85.1	-58.8	8.41 (349)	G5;UnK	37.8	-61.4			57.9±3.3			0.90			
	116559	117043	85.8	-61.2	8.81	G0;UnK	38.2	-62.8	0.2 ±1.5	2.3 ±2.1	72.2±5.7			0.98	2.4133	0.280	
836	116602		336.7	-66.5	4.74 (13)	A2V;OtH	-57.6	-42.7			61.4±0.8	3.4		2.40			
	116602	116699	336.1	-66.6	7.03	A7/A8I;BiN	-69.2	-40.7	11.3 ±1.2	-1.6 ±1.2	61.7±2.4	3.5	-0.0±2.7	1.51	0.2393	0.960	
837	117057		5.5	-74.1	6.95 (142)	F5V;BiN	-4.3	39.9			98.9±10.7	3.3		1.59			
	117057	117598	3.0	-75.5	8.88	F6V;UnK	-11.7	38.2	9.2 ±1.8	2.1 ±1.9	99.9±13.9			1.17	2.5573	0.120	
	117057	117680	6.8	-76.0	9.32	F0V;UnK	-7.6	36.5	2.4 ±1.6	3.6 ±1.6	96.6±11.2			0.93	3.3410	0.620	
838	117073		105.7	-31.2	4.93 (20)	K0III;BiN	55.9	-58.8			68.8±2.6	-8.0		1.63			78 Peg
	117073	116017	103.1	-28.9	7.36	F5;SpB	64.0	-54.6	-10.5 ±2.1	-4.4 ±2.0	68.1±38.6	-40.9	31.4±9.1	1.14	3.9362	0.640	kn: 116016
839	117454		37.5	-75.8	9.80 (460)	G5V;UnK	-45.8	5.0			88.1±11.3			0.92			
	117454	117720	42.2	-76.4	10.13	G0;BiN	-45.8	6.1	-0.5 ±2.3	-4.8 ±2.3	91.2±15.6	42.8		0.88	1.9501	1.000	
840	117573		114.0	-7.6	7.15 (167)	F5;BiN	-12.6	-36.3			58.5±2.2	12.0		1.23			
	117573	117733	114.3	-7.6	7.57	F5;OtH	-14.5	-38.8	1.7 ±1.7	2.5 ±1.8	55.9±2.0	14.6	-2.6±1.7	1.09	0.3113	0.990	